

**VOLUME ONE**

- Physiography
- Existing Land Use
- Population
- Economics
- Neighborhood Analysis

**KEY WEST COMPREHENSIVE PLAN**





## RESEARCH AND ANALYSIS

Part I of a comprehensive planning report for the City of Key West, Florida

for, and under the general direction of the  
FLORIDA DEVELOPMENT COMMISSION  
Tallahassee, Florida

prepared by:

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## SURVEY OF PHYSIOGRAPHIC CHARACTERISTICS

In the process of urbanization, the physical environment is modified by man for various human activities. If the various natural characteristics of the area are understood and respected, the resulting man-made urban pattern will serve as an efficient tool for man's living, working, and recreational activities. If, however, slight regard is shown for the influences of the natural environment, the pattern of activities will be ill-suited for human needs and, thus, will result in such undesirable consequences as flooding, soil erosion, property damage, unnecessarily expensive utility costs, polluted water supplies, or in extreme situations, loss of life. The purpose of this study then, is to identify and attempt to understand within the limitations of time and available information, the complex constraints and opportunities intrinsic to the Key West region's physical environment. This understanding will provide the necessary knowledge to determine an optimum pattern of land uses that will avoid the undesirable consequences of poorly planned urbanization.

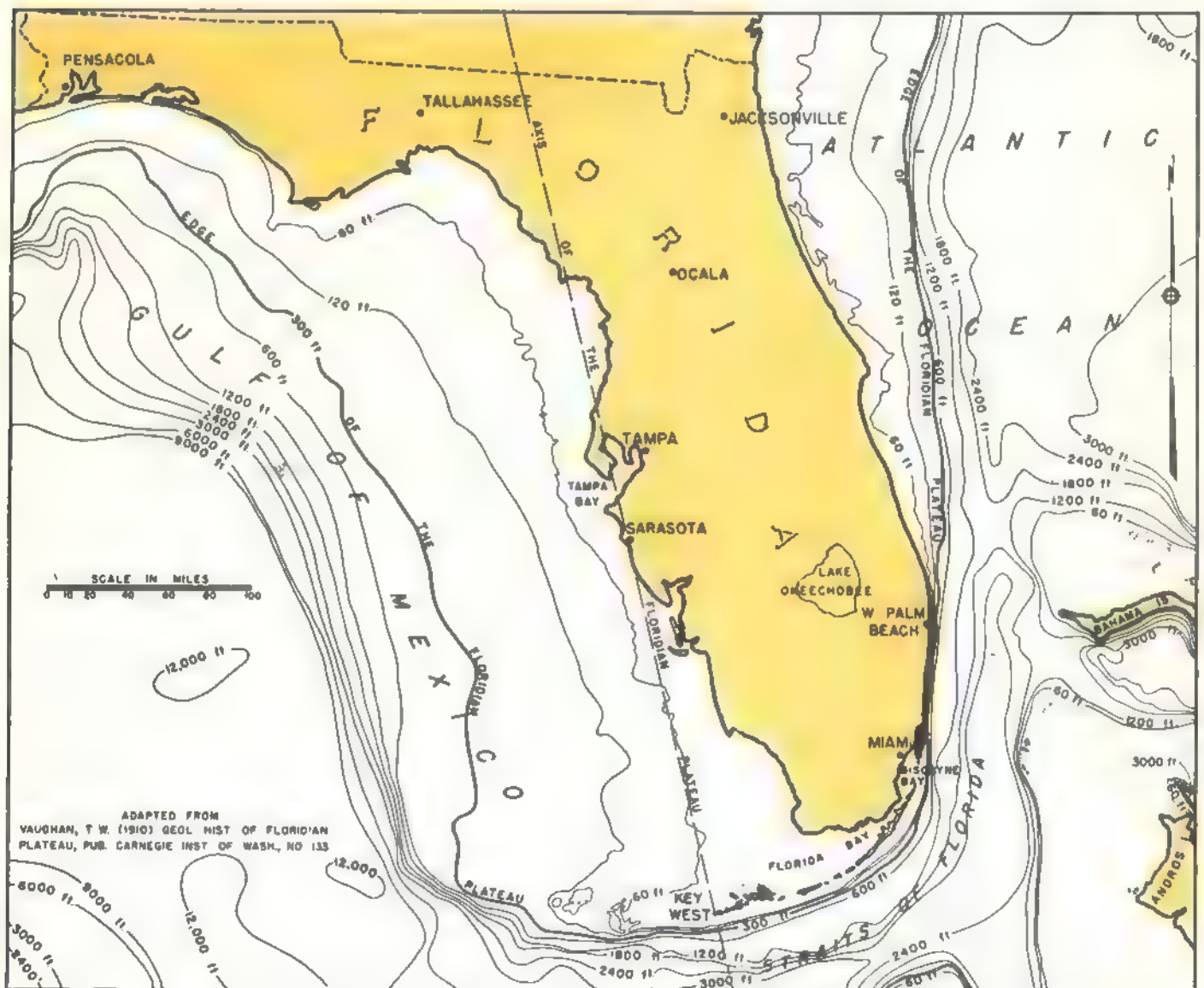
## METHODOLOGY

In the sections that follow, the opportunities and constraints posed by the natural environment will be delineated by identifying the various characteristics of the land, water, and climate of the Key West Planning Area from the existing technical literature. This survey of the physical characteristics of the region will be followed by an evaluation of the limitations posed by these factors on the configuration of the development of the Key West area, and recommendations as to the areas which should be considered for future urbanization.

## LAND

The buildability of the land in the Key West region is determined by its unique physiographic characteristics. Specifically these limiting factors include the characteristics of the substrata of the area, its soils, elevations, the availability of fill materials, and beaches. A survey of these factors and an analysis of their influences on the configuration of urban development in the vicinity of Key West follows:

Substrata - The state of Florida occupies about half of a great projection of the continental shelf which separates the deep waters of the Gulf of Mexico from those of the Atlantic Ocean.



THE FLORIDA PLATEAU



This partially submerged plateau appears to have been part of the old Appalachian Highlands. It was above sea level until submerged due to a fluctuation in sea level caused by a recession of glaciers. As it sank, sediments of the Appalachian Highlands were deposited on it; however, owing to the distance from the source (the land masses of present Georgia and Alabama) only the finer sandy material reached the Florida area. Much of this material was composed of lime derived from local fauna and marine flora at the time of submergence. This sediment was carried to the sea by rivers and it was subsequently carried southward by waves and currents and deposited on the off-shore bottom.

In the succeeding periods of the geologic history of the peninsula, at least five cycles of submergence and emergence have been identified and at each stage deposits were laid down. During each cycle when the land was above sea level a layer of limestone was deposited and when submerged it was covered by a veneer of sand or other sediment. Only one layer is without this covering of sand or other sediment. This sandy and shelly outcropping which extends along the east coast south from the Georgia line to Palm Beach County is popularly called "Coquina Rock". In the southern part of Palm Beach County, this formation merges into an oolitic limestone formation called "Miami Oolite". The typical Miami oolite limestone which is composed of soft white small spherules grains or oolites, sand and shell fragments and contains as much as 95 per cent of calcium carbonate differs from other types of limestone by its content of small spherules of carbonate of lime, which resembles fish roe. The proportion of these spherules in the limerock varies greatly. Some parts of the rock are composed almost entirely of spherules, other parts contain only a few, and some parts contain none. And, since the rock is in general porous and unresistant to the solution work of ground water, it contains numerous solution holes and cavities. Usually the Miami oolite has a thin hard crust covering the softer portions of the rock. In the Richmond area, up to 75 per cent of the land surface consists of jagged, pitted, outcropping limerock. Whereas on the Keys, the surface of the oolite is much smoother.\* The Miami oolite limestone extends southward along the Atlantic Coastal Ridge in a band through the rim of the Everglades. It submerges to form the flood of Florida Bay and emerges again to form the western Florida Keys.

The western Keys form a more or less compact group which extends from East Bahia Honda Key to Key West, a distance of more than 40 miles. The maximum width of the group is 14 miles. These Keys are underlain by an east-west ridge or reef of limestone that rises from the floor of Florida Bay at the southern edge of the Florida plateau. (The ridge which stands only 10 to 20 feet higher than the surrounding waters was formed as a shoal or bar in the sea, due to the accumulation of organic remains containing calcium carbonate. This process is continuing in the sheltered waters of the north Keys today.) This limestone bank which forms the substrata of the western Keys is crossed by many transverse north westward-trending shallow channels which divide the land areas into islands. These channels are kept free of sediment by strong tidal currents, although they likely originated as drainage channels in an earlier ice age when the entire bank stood above water.\*\*

\* United States Department of Agriculture, "Soil Survey Report of Naval Installations in the Miami and Key West Area."

\*\* State of Florida Department of Conservation, Florida Geological Survey. "Late Cenozoic Geology of Southern Florida (Bulletin #27) and Physical Elements of Geography." The geologic history of the Key West area was derived from the preceding sources.

Consequently, the western Keys, with their limestone sub-base are quite similar to the Miami area and are markedly different than the upper Keys which are composed principally of sand shoals deposited on the shallow limestone bottom. This geologic history is the determinant of the characteristics of the Key West region.

Soil - The characteristics of the soils in the Key West area determine their capability for supporting various types of urban activities. Although there are many other determinants of the optimum pattern of activities, the capabilities of the soil are basic and continuing and, consequently, should receive consideration not only as a guide to determining use, but also as an index of the kinds and magnitude of problems that must be overcome. The historical development of the area shows that soils having fewer limiting properties and requiring fewer corrective actions were improved first and most intensively. Soils with few limiting properties may be amended for a wide array of urban activities at varying levels of intensity, while others are adaptable for only a limited number of activities at a restricted level of intensity.

The determination of urban supporting capabilities of various types of soils in the Key West region is based upon the known characteristics of the soils which were identified in a detailed soil survey of the Naval Installations conducted in 1954.

As stated above, the Key West region is in a geologic area known as Miami oolite. The original soils are a shallow marl over limestone. The substrata rock appears at the surface in numerous outcroppings. The 17 different types of soils that have been identified in the Key West region are derived from the substrata named above. The characteristics of these various types of soils or mapping units are described on the following pages.\*

### Soil Descriptions

- a. 4A Rockland. This mapping unit is composed of areas of rockland with sufficient elevation above sea level to be only slightly affected by salt. Typically, it consists of rocky areas in which small pockets of dark grayish-brown loamy marl with varying amounts of organic matter abound. These pockets are seldom more than 6 to 8 inches thick. Potholes several feet in diameter and several feet deep also occur in this unit. Originally most of these holes were filled with peat, but this organic material has since been removed for use as topdressing. In developed areas, the surface materials have been scraped from the roads and building areas and used as topdressing in the vegetated areas. Most areas have been scraped and leveled, leaving a thin layer of mixed loamy marl, crushed rock and a small amount of organic matter spread over much of the surface.

\*op.cit., United States Department of Agriculture.



Only a few small areas of this unit remain undisturbed. They have a dense, brushy vegetation, a thin cover over the rock of loose leaf mold and potholes filled with peat or loamy marl. For any engineering use requiring a solid foundation, these potholes will have to be located, cleaned out and refilled to provide a stable base for development. Areas of this mapping unit that are to be vegetated will need sufficient topdressing to provide for rooting depth and a management plan to provide fertility and moisture, and prevent salt accumulation.

- b. 41A Rockland, salt affected. This mapping unit is very similar to the Rockland unit described above except for one major difference. It occurs at a lower elevation and is affected by salt accumulation from occasional high tidal action. Therefore it has the same hazards as the Rockland unit plus the additional hazards of flooding, salinity, and corrosion potential.
- c. 42A Rockland, tidal flats. This unit consists of rockland that occurs at approximately sea level and is subject to daily tidal inundation. Parts of the unit are covered by water most of the time and have a thin covering of fine marly sediments. Other areas have scattered small mangroves. Ditches have been cut into the rock in some areas for mosquito control and the loose rock scattered over the surface. The hazards involved in the use of areas within this mapping unit are so numerous and so severe that filling in with stable materials is the only solution.
- d. 5A Made land, coarse, deep. This mapping unit consists primarily of dredge spoil ranging from 2 1/2 to 6 feet thick. This material is composed of crushed limestone ranging up to 3 and 4 inches in diameter, interfilled with finer particles of soft marl. Developed areas of this unit include compacted fill for streets, houses, buildings, parking lots, etc. Also, included are lawns or other vegetated areas that have received a thin topdressing of mixed fine marl and organic materials. Undeveloped areas have not been vegetated or smoothed and remain in a rough, rocky condition. These areas must be smoothed and well compacted for foundation or roadway usage. In vegetated areas the major hazards involved are low water holding capacity, limited root zone, and low fertility.
- e. 51A Made land, coarse, over rock. This unit consists of areas of rockland that have been covered over with dredge spoil, 6 to 30 inches thick. This covering consists of materials similar in all respects to that in unit 5A. Unit 51A differs primarily by having limestone bedrock within depths of 30 inches. Areas of this unit were built up to provide suitable land for buildings, houses, lawns and recreational areas. The areas that are vegetated have had a mixture of fine marl and organic matter incorporated into the top few inches. There are compacted areas for streets and parking lots included in the unit. Hazards involved in the use of areas of this unit are the same as in made land, coarse, deep. The only difference is that firm bedrock occurs within depths of 30 inches.

- f. 52A Made land, fine. This unit occurs only in the vicinity of the Seaplane Base. It is composed of materials dipped from the bay bottom by a clam shell digger and deposited here as fill for the old Flagler rail yards. This fill material is much finer than fill materials used elsewhere. It consists of mixed fine marl and shell stratified with thin to thick layers of soft, light gray marl that has a silt loam texture. The thickness of the fill is more than 30 inches. When this fine material is dry it is firm, but below depths of 2 feet it remains wet and is very unstable. Buildings in these areas should be placed on pilings. A few small areas have up to 12 inches of coarse spoil overlying the finer marl material. This land type is hazardous for engineering uses because of its inability to carry heavy loads and should be thoroughly checked before such usages. It also carries the hazards of low fertility, shallow rooting depth and salinity.
- g. 53A Made land, compacted. This mapping unit consists of coarse fill material of any depth up to 6 feet, which has been well compacted to give semi-paved properties for roadways, parking aprons, buildings, storage tanks, shoulders of runways and taxi strips. It has few hazards for engineering uses other than corrosion potential, but depth and underlying material should be investigated before exceptional loads are applied. Vegetation is not anticipated for these areas.
- h. 6A Old coastal dune. This mapping unit is an old stabilized coastal dune. It occurs slightly higher than adjacent lands and consists of deep deposits of sand size marl and fine shell fragments overlying limestone. The surface soil is approximately 6 inches thick and has organic matter mixed in as a topdressing. It is dark grayish-brown speckled with light colored marl and shell fragments. The rest of the profile is a very pale brown mixture of loose marl and shell. Limestone occurs at depths greater than 3 feet. There is a bit of rocky material mixed into the surface in places due to the scattering of coarse fill from adjacent areas. Areas of this unit need only compaction for most urban or engineering uses. Hazards involved in vegetated areas are low available water capacity and low fertility.
- i. 7A Coastal beach and dunes. This unit is composed of existing narrow strips of beach and adjacent low dunes. The soil consists of a mixture of light colored, sand sized marl and shell. Limerock underlies the beaches at shallow depths and outcrops frequently. The dunes are underlain by limerock at depths of more than 3 feet. They are very rapidly permeable, droughty and subject to wind erosion. They also have low fertility and a salinity problem in most areas. The dunes need compaction for foundation purposes, but otherwise are less hazardous for such uses than are the beaches.
- j. 8A Sanitary fill. This unit consists of deep, coarse fill material that is used as a disposal area. When trenches dug in the area are full, they are covered over with more coarse fill material. As settling takes place, the strips are periodically releveled. After such areas have been fully utilized for disposal and are filled over and compacted they are satisfactory for housing areas, recreation or other uses.



- k. 9A Mangrove swamp. This unit consists of existing mangrove swamp that is either flooded with each tide, or if cut off from tidal action, remains permanently wet. These areas may have a thin layer (6 to 10 inches) of peat or soft marl sediments overlying limestone. This limestone occurs at very shallow depths and outcrops frequently in all areas. These areas are suitable only for wildlife as they exist at present, but may be filled over with stable materials for other uses.
- l. 11A Perrine marl. This mapping unit consists of poorly drained, moderately permeable, alkaline, fine textured marl soils which are underlain by limestone within depths of 18 to 30 inches. The surface soil (0 to 6 inches) is a grayish brown marl with a silt loam texture. Rubbed between the fingers it feels slick and as smooth as talc. A few white marl nodules occur in this layer and it has a low organic matter content. Below the surface and extending down to limerock is a very pale brown to light gray marl with the same silt loam texture and slick, smooth feel. This layer has a few fresh water shells scattered through it. Depth to the porous oolitic limestone ranges from 18 to 30 inches. The normal water ranges from 0 to 18 inches and internal drainage is slow. This marl soil is unstable under load pressures in its natural condition, but upon drying it becomes firm and stable. With the high water table that occurs in the area keeping the thick marl layers soft and unstable, this soil should be both drained and covered by firm fill material for all engineering or foundation uses. Drainage and fertilization are the primary needs on areas to be vegetated.
- m. 10A Perrine marl, deep. This mapping unit is similar in most respects to unit 11A, Perrine marl, except that depth to the underlying limerock ranges from 30 to 72 inches.
- n. 12A Perrine marl, shallow. This mapping unit is similar to unit 11A, Perrine marl, except that depth to limerock ranges from 6 to 18 inches. Included in the unit are pockets in the limerock deeper than 18 inches and pockets or layers of peat up to 6 to 8 inches thick.
- o. 13A Perrine marl, shallow, peat substratum. This mapping unit is similar to unit 12A, Perrine marl, shallow, except that it has a layer of dark brown, fibrous peat between the surface layer of soft marl and the underlying limestone.
- p. 14A Made land. This unclassified mapping unit consists of marl fill material extracted from borrow pits on the property. This fill has been deposited over natural ground to depths of 24 to 30 inches. It is dry and packed and free of a water table thereby giving a reasonably stable foundation for roads, buildings, and antennae areas.
- q. 15A Rockdale fine sand - limestone complex. This mapping unit is composed of Rockdale fine sand intricately associated with oolitic limestone outcroppings. The Rockdale soil occurs in the cavities and solution holes in the porous limerock. Depths of soil in these cavities generally range from 2 to 24 inches, but in some spots extend as deep as 4 feet. The surface soil is a dark grayish-brown fine sand,

2 to 4 inches thick. This is underlain by a pale brown to yellowish-brown fine sand layer ranging up to 18 inches in thickness. In some spots the fine sand layers rest directly on limerock, but in much of the area a layer of reddish-brown fine sandy clay loam overlies the porous rock. Areas with fine sandy loam surfaces over the fine sandy clay loam subsoils at shallow depths are included in this unit. These soils are well drained, moderately fertile and neutral to alkaline in reaction.

Much of the area can be traversed only by stepping from jagged rock to rock, while in some smaller areas one can walk on the soil between the rocks. Most of the area remains in its native state and the vegetation consists of pines, palmettos and ferns.

#### Description of Limiting Soil Properties

- a. Available Water Capacity. This refers to the capacity of soils under free drainage to store water that is usable for plant growth. It is the difference between the amount of water in a soil at field capacity (the amount of water held by the soil under free drainage after thorough wetting and adequate time for water tension adjustments) and the amount remaining in the soil at wilt point (the amount of water held by the soil under tension too great for plant use). It is expressed in inches of available water per inch of soil. Total available water capacity of any soil is the product of available water capacity times the effective root depth.

Available water capacity is important to all uses that involve growth of plants. However, it is a seriously limiting factor only when the soil has a very low available water capacity. Soils with low available water capacity are very droughty in dry seasons and require constant irrigation to maintain healthy vegetation of the types used for cultivation and landscaping.

- b. Water Table. Wetness is defined in terms of the amount of free water in or on the soil. This is reflected in the depth to, and duration of, a seasonally high ground water table.

Wetness bears directly on the kind and degree of management needed if the soils are to be used for improved pasture or cultivation. It controls to a great extent the kinds of trees, type of plants, and the rate of growth of native vegetation.

Wet soils are poorly suited for dwelling houses or light industry unless adequately drained. Wetness affects stability of foundations, growth of vegetation used for landscaping, hazard of flooding and general comfort of living. Where septic tanks are required for sewage disposal, wetness is a serious problem. The effectiveness of a septic tank drainage field is in inverse proportion to the soil wetness. The restrictions imposed by wetness can be overcome only by effective drainage.

Wetness of soils directly affects design and construction of roads, railroads and airport runways. Good drainage is required for maximum bearing capacity of soil materials in subgrades. The design and intensity of drainage facilities needed to assure a sound road bed are directly related to wetness. Wetness profoundly affects trafficability of soils and thereby the limitation on using them for unpaved or lightly paved roads and parking areas.

Wetness affects wildlife in that game is usually more abundant in wet areas than very dry areas. Wet areas provide better refuge, yet the wetter areas are less accessible. In recreation, wetness is considered an important limitation on hunting only where soils are wet enough to seriously affect accessibility.

Good drainage is necessary for camp sites or picnic areas. Wet areas often provide attractions for campers but they also present serious problems in locating or developing good camp sites. Where playgrounds are developed on wet land, adequate drainage is required.

- c. Flood Hazard The hazard of flooding in times of high water is significant to almost all uses. Frequency of flooding, duration of flooded condition, depth and velocity of flood waters all contribute to the degree of the hazard. In the area covered by this report, flood hazard is confined to two principal conditions: (1) flooding by tidal water at sea level, and (2) flooding by rise of ground water above the land surface in low places during seasons of high rainfall. Very little surface runoff collects in stream channels to produce the kind of flood associated with river bottoms.

- d. Depth to Rock Agricultural uses of soils are affected by depth to rock. The presence of the rock limits the root zone of the plants and free movement of water, and thereby the availability of water, nutrients, and anchorage. Shallow-rooting plants are less affected by rock than deep-rooting plants.

The depth to rock and kind of rock are important considerations for buildings, roads and railroads, airport runways, and other uses where excavation or grading are needed. Depth to porous rock affects the operation of septic tanks only when it is near enough to the surface to interfere with placement of the tank and tile or where it permits contamination of pure water supplies.

- e. Productivity Productivity as used here refers to the ability of the soil to produce adapted common crops under a reasonably high level of management. This level of management includes economically feasible fertilization, proper seed selection, cultural practices, and harvesting practices, not irrigation. A soil may be productive, even though low in natural fertility, providing it is capable of responding to good management.

- f. Trafficability As used in this classification, trafficability refers to the ease with which one can pass over an area on foot or in a light vehicle. Soil properties that affect trafficability are texture of the surface soil, wetness, presence of rocks or boulders and configuration of the surface.



Trafficability is important to all uses that require movement on foot or in light vehicles. The degree of limitations or restrictions on traffic is most significant on very sandy, very muddy or very rough soils, and is least on the firm, smooth well drained soils.

- g. Traffic Supporting Capacity This classification is based on the ability of undisturbed soils to sustain mobile loads. Several methods of expressing traffic supporting capacity have been devised. Some of these are California bearing ratio, Florida bearing value, and the AASHO group index. Although the evaluation is based on undisturbed soil, the characteristics of carefully compacted disturbed soil are similar.

This rating is important in road building. It indicates the quality of soil for subgrade material and the treatment needed to prepare it for a sound roadbed.

- h. Presumptive Bearing Value. This classification is based on the ability of soils to sustain dead weight. It is calculated in terms of maximum allowable static load that can be supported by specified soil materials. The assigned values are based on experience that has been correlated with specific tests that show the ability of soils to retain their physical structure under static loads.

The presumptive bearing values are used to determine soil stability for building foundations. The values given are for well drained soils. When soils are subject to periodic wetness the values may be reduced by as much as 50 per cent. In the scope of this paper, these values are intended only for buildings no more than two stories high and without heavy machinery.

- i. Corrosion Potential. Soil corrosion is that quality of the soil that correlates with its conductivity of an electric current. The nature and amount of soluble salts plus soil acidity and moisture content, largely determines that quality. Physical properties of the soil that determine its ability to transmit water and air also influence its corrosion potential.

- j. Salinity. The parts per million of soluble salts in a soil that adversely affect the growth of plants

The analysis of the limiting properties of the various soil types that occur in the Key West region which will create problems which must be overcome for various kinds of urban uses such as foundation construction, landscaping, road and railroad construction, are shown in the following table. The map which follows, illustrates the generalized pattern of the various types of soil in the Key West area.

Table 1  
Chief Limiting Properties and Degree of Problems of  
Key West Soils for Selected Urban Uses

Soil Symbol	Soil Name	Foundation Construction		Landscaping		Road & Railroad Construction	
		Type	Degree	Type	Degree	Type	Degree
4A	Rockland	None		AWC, ERD, Prod.	Very severe	Slight R.	Slight
41A	Rockland, salt affected	Cor.	Moderate	AWC, ERD Prod.	Very severe	R., Fl.	Moderate
42A	Rockland, tidal flats	Cor. Fl.	Severe	AWC, Prod. Sal., ERD	Very severe	Sal., Fl., R.,	Severe
5A	Made land, coarse deep	Cor PBV	Severe	AWC, ERD Prod.	Very severe	TSC	Moderate
51A	Made land, coarse over rock	Cor. PBV	Slight	AWC, ERD Prod.	Very severe	TSC	Slight
52A	Made land, fine	PBV, Cor.	Very severe	Prod., ERD Sal.	Very severe	TSC	Severe
53A	Made land, com- pacted	PBV, Cor.	Slight	Not applicable	Very severe	TSC	Slight
6A	Old Coastal dune	PBV	Slight	AWC, Prod.	Severe	TSC	Slight
7A	Coastal beach and dunes	Fl., Cor., PBV	Very severe	ERD, Sal., Fl., AWC	Very severe	Fl., Sal., TSC	Severe
8A	Sanitary fill		Variable		Variable		Variable
9A	Mangrove swamp		Variable		Variable		Variable
10A	Perrine marl, deep	PBV, Cor., WT	Very severe	WT, Prod.	Moderate	TSC, Fl., WT	Very severe
11A	Perrine marl	PBV, Cor., WT	Very severe	WT, Prod.	Moderate	Fl., WT TSC	Very severe
12A	Perrine marl, shallow	PBV, Cor., WT	Severe	ERD, WT, Prod.	Severe	Fl., WT	Very severe
13A	Perrine marl, shallow, peat substratum	PBV, Cor., WT	Very severe	ERD, WT, Prod.	Severe	TSC, Fl., WT	Very severe
14A	Made land	PBV, Cor.	Slight	ERD, Prod.	Very severe	TSC	Slight
15A	Rockdale fine sand - limestone	R.	Slight	R.	Moderate	TSC	Slight

Abbreviations for Limiting Properties

AWC - Available water capacity  
Cor. - Corrosion potential  
ERD - Effective root depth  
Fl. - Flood hazard  
Prod. - Productivity

PBV - Presumptive bearing value  
R. - Rock  
Sal. - Salinity  
TSC - Traffic supporting capacity  
Traf. - Trafficability

WT - Water Table

Elevation - The elevation of the land, vis-a-vis mean sea level, is a highly influential factor affecting the buildability of the land in the Key West area. The altitude of the land has exercised considerable control on the existing pattern of development and will be a major determinant of both the extent and the form of future development.

Although detailed topographic data is not available for the Key West region, elevations of urban development on the islands of Key West, Stock Island, Fleming Key, Sigsbee Park, and Raccoon Key average from 4 to 10 feet. The highest elevation in the area is 13 feet above mean sea level on Key West Island. A study conducted by the United States Corp of Engineers in 1961, recommends that urban construction in the Key West region be prohibited on lands with less than 8 to 9 foot elevation above mean sea level.

The illustration of the generalized topography of the land areas of the Key West region shown on the following page is based on "Man Hole" elevations supplied by the City of Key West.

The total area of existing lands above mean sea level in the Key West region is approximately 4,629 acres. The following table shows the breakdown of this area into areas of developed and potentially buildable lands above mean sea level on each of the islands in the Key West region:

<u>Location</u>	<u>Total Area</u>	<u>Developed Area</u>	<u>Potential Area</u>
Key West	2,997.39	2,436.80*	560.79
Stock Island	844.90	559.70	285.20
Fleming Key	214.41	214.41*	-
Sigsbee Park	297.00	297.00*	-
Raccoon Key	224.80	55.20	169.60
Cow Key	<u>50.50</u>	<u>-</u>	<u>50.50</u>
TOTAL	4,629.00 acres	3,563.11 acres	1,066.09 acres

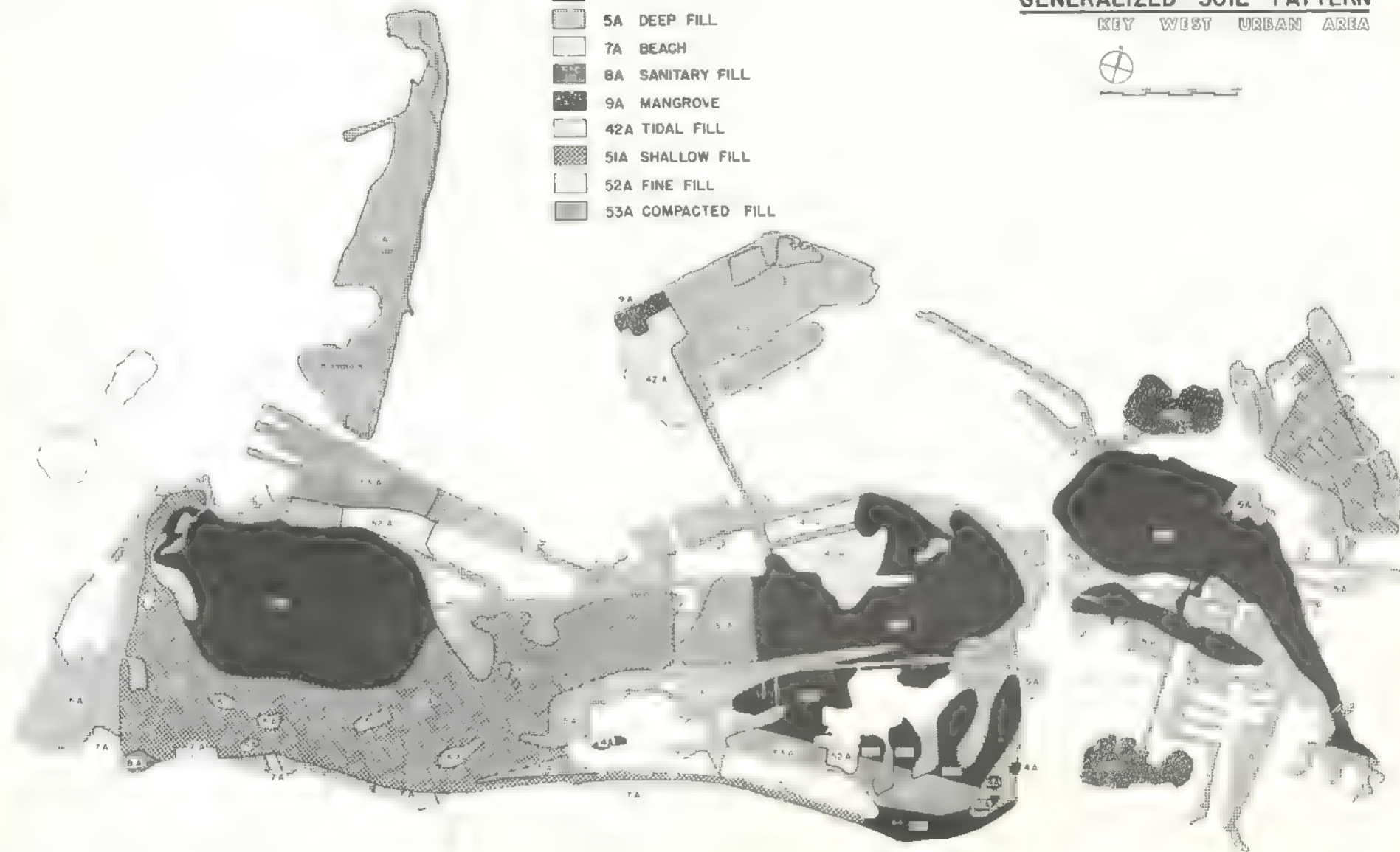
\*Assuming military property to be fully developed.



-  6A COASTAL DUNE
-  4A ROCKLAND
-  5A DEEP FILL
-  7A BEACH
-  8A SANITARY FILL
-  9A MANGROVE
-  42A TIDAL FILL
-  51A SHALLOW FILL
-  52A FINE FILL
-  53A COMPACTED FILL

# GENERALIZED SOIL PATTERN

KEY WEST URBAN AREA



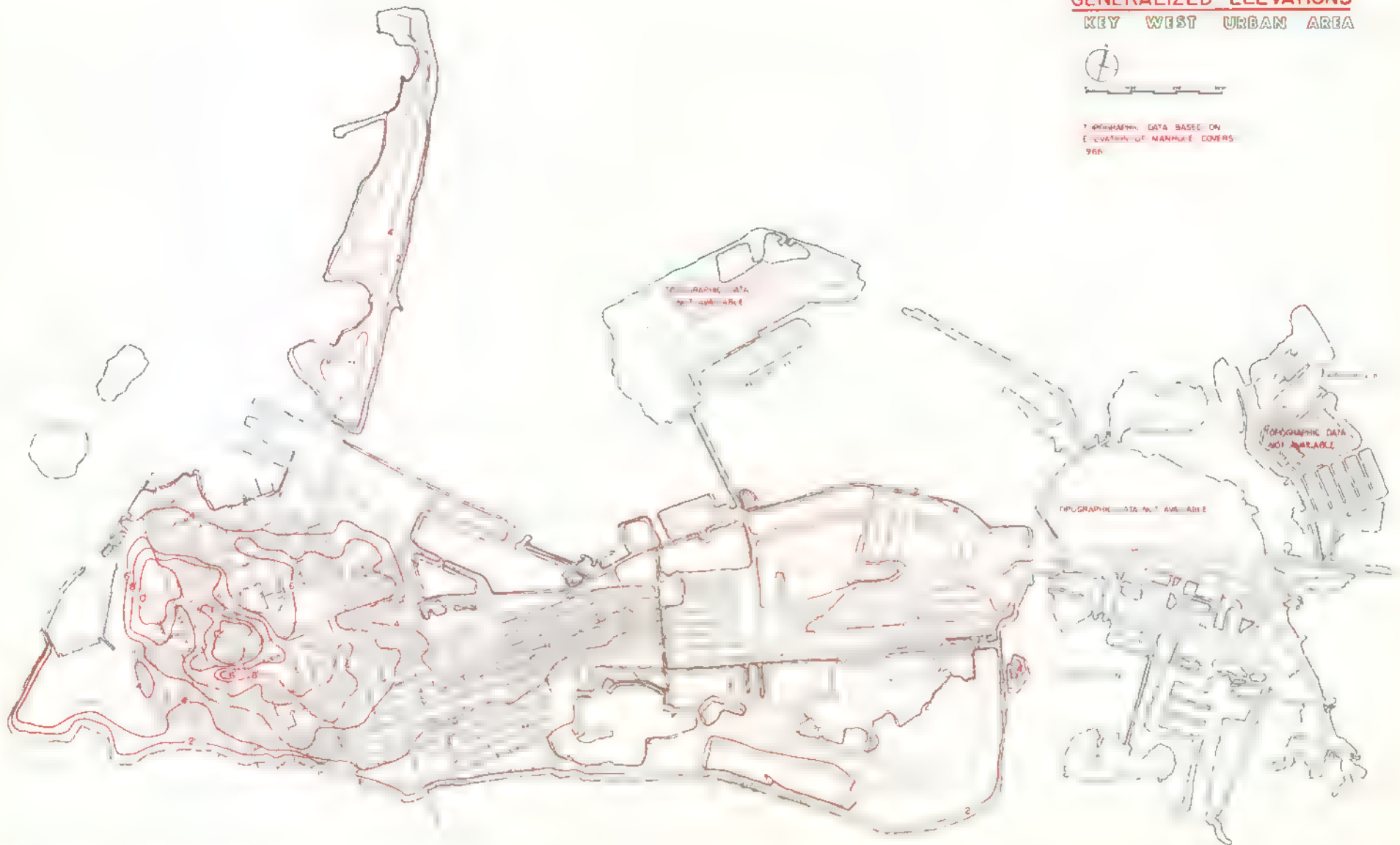


# GENERALIZED ELEVATIONS

KEY WEST URBAN AREA



TOPOGRAPHIC DATA BASED ON  
ELEVATIONS OF MANHOLE COVERS  
1968





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In addition to lands above mean sea level, there is a potential for creating additional buildable land in the Key West vicinity by filling marginal and totally submerged lands. The following shows the approximate potential areas of these lands in two-foot depth categories:

<u>Marginal and Totally Submerged Lands</u>	<u>Area in Acres</u>
Lands 0 to -2 feet elevation	8,379
Lands -2 to -4 feet elevation	3,254
Lands -2 to -6 feet elevation	3,874

The illustration on the following page shows the locations of the lands in these three elevation categories.

Littoral Materials - The potential for creating land for urban construction is dependent on the availability of fill material as well as the elevation of the submerged lands. This factor is particularly critical due to the fact that a very large part of the submerged bottoms in the Key West area is rock.

Two major sources of fill have been identified by the United States Corps of Engineers in their 1958 study.\* One source identified is the area at the jetties located at the northwesterly end of the Northwest Channel to Key West Harbor. Field surveys of the United States Corps of Engineers located about three-fourths of a million cubic yards there, and aerial observation, local opinion, and past history of maintenance dredging between the jetties indicate that several times that quantity is available in the immediate vicinity. The other source is located about eight miles east-northeast of Northwest Channel between Calda Channel and Harbor Keys. No Corps of Engineers surveys have been made of that location; however, the source is being used locally to supply sand for the Monroe County beach at Key West. The contractor who is supplying the sand to the County has stated that his probings indicate an unlimited amount of material suitable for beach sand. The material is calcareous sand. In addition to the two sources, an unlimited amount of soft mud exists on the shallow bottoms to the north of Key West Island.

Coastal Areas - The extent, characteristics, and stability of the Key West region's ocean beaches are an important factor in the area's future growth, not only for their recreational value for the indigenous and tourist populations, but also for the protection they afford to existing shore structures and upland urban development and the barrier they establish for urban expansion.

\* United States Corps of Engineers, "Key West Florida Beach Erosion Control Study" (House Document #413, 1958, p. 11.)

Beach recession or erosion is a critical problem not only in the Key West area but also in most other coastal areas of the Florida peninsula. Erosion caused by natural forces only is generally slow (approximately 1 foot per year) if not interfered with by channels, sea walls, or other devices which interrupt the normal "long shore" drift. However, there is evidence that natural erosion is increasing. There is at present a world-wide warming trend which since the Roman Era, approximately 2,000 years ago, has resulted in an annual rise in sea level of approximately 1.2 millimeters per year. It is therefore to be expected that until climatic conditions start moving toward another glacial period, a rise of sea level totaling perhaps 3 to 4 feet may occur. A rise of 1 foot, which is projected to occur within 100 years, may cause shoreline recession of as much as 100 feet on Key West's south coast where the area existing beach is only now maintained by artificial nourishment.\*

The increase in natural erosion in the Key West area is also due to the erosion of the limestone reef lying about five miles offshore, which serves to break up storm waves. The gradual erosion of this natural barrier exposes the southern shores of the area to the waves of the Straits of Florida.

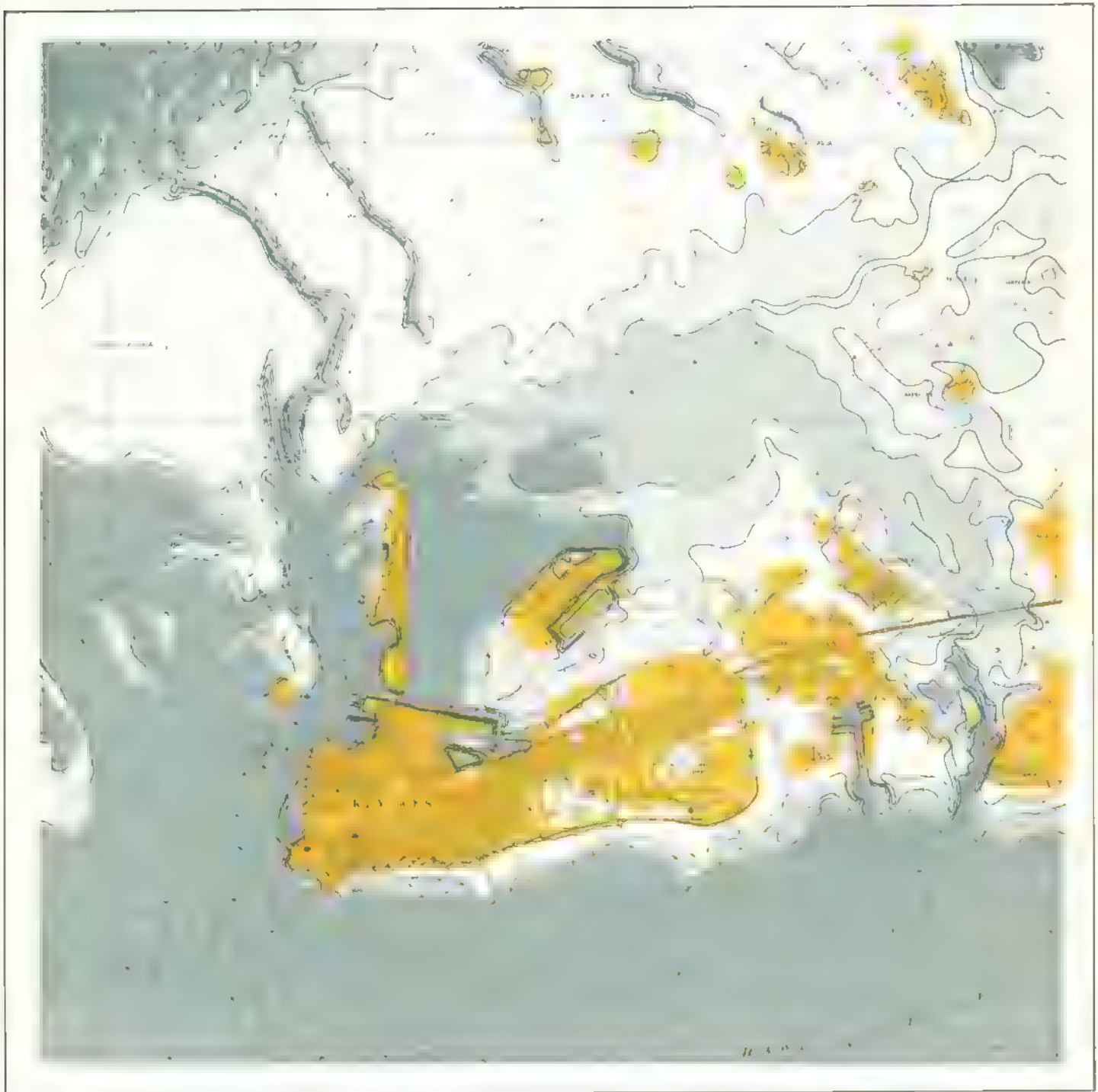
Man-made interferences with the natural shore processes are also a major cause of erosion in urban areas. Groins which may cause serious lee side erosion; sea walls, which when built as vertical bulkheads may cause a lowering and increased beach erosion; or, improved channels or inlets, which alter currents all may cause increase in the natural erosion rate.

The combined erosional affects of these natural and man-made forces are demonstrated by the southern beach area of Key West Island, which is on the only two extensive beach areas in the lower Keys (the second is located on Bahia Honda Key). Surveys of southern beach profiles of the Island show that a moderate rate of erosion occurred prior to the construction of a seawall in 1926. Although some recession of the shoreline was recorded prior to the construction of the seawall, a major erosion problem developed soon after the seawall was built. In 1950, a rock mound was erected normal to the shore at the west end of the area to trap littoral material moving in a westerly direction. However, since the offshore bottom is composed of exposed rock, no material was collected. What remaining beach existed was eroded in the hurricane of 1944, which also did extensive damage to the seawall, Roosevelt Avenue, and the upland properties. In 1960, a 100' x 6,200' public beach was built by placement of 136,000 cubic yards of sand with federal assistance, under a project authorized by the Rivers and Harbors Act. This area is artifically nourished annually with 20,000 cubic yards of sand.\*\*

\* Coastal Engineering Laboratory, University of Florida, Gainesville, Florida. "Review of Beach Erosion and Storm Tide Conditions in Florida." 1961-2, p. VIII.

\*\* op. cit., United States Corps of Engineers, pp. 18-19.





DEPTH BELOW MEAN SEA LEVEL



SUBMERGED LANDS MAP



## WATER

The characteristics of the water bodies surrounding the Key West region constitutes another major influence on the form of urban development on the islands. The significant factors to be considered include the astronomical tides, the offshore currents, and existing channels, terminals and other fixed surface uses. Identification of and analysis of some of the possible influences of these factors on the form of future urban development in the Key West area follows.

Tides - The celestial tides are caused by the gravitational attraction of the Moon and to a lesser extent the Sun and the centrifugal force caused by the revolution of the Earth about the center of gravity of the Earth-Moon system.

The effect of these combined forces upon the fluid oceans is to draw a flow of water toward the Moon-ward side of the Earth and toward the opposite side of the Earth, causing a flood tide there, while causing an ebb tide at the two sides at right angles to the Moon. Ideally, the pair of bulges and of lowered water levels would, as the Earth rotates on its axis, circle the Earth in a westward direction producing two high and low tides each day; however, because of the 28-day Moon period, the tide is delayed somewhat, causing the tides to occur at different times each day. The average difference in water level between high and low tides (the tidal range) in the Key West area is 1.3 feet, and in the vicinity of Northwest Channel jetties it is 2.5 feet. The spring tide, which occurs approximately every two weeks when the Sun and Moon's gravitational forces combined equals 1.6 feet. The directions of the flood and ebb tides in the channel west of Key West Island are 15 and 170 degrees respectively. This direction and times of high and low tides however, may vary in different areas of the Key West region due to the shoals to the north and to a lesser extent to the south.\*

The movement of the tides over the bottom causes a scouring effect which keeps the north-south channels between the islands free of siltation. Similarly man-made channels in openings to the north and/ or south will not silt up or collect debris or stagnate water due to the flushing action of the tides.

Surface Drifts and Currents - The waters of the ocean exhibit general patterns of surface currents determined by the prevailing winds (counterclockwise in northern hemisphere) and modified by submerged land masses. The Florida current which is a discharge from the Gulf of the westward flowing north equatorial current, achieves velocities from 4 to 6 miles per hour in making its exit through the narrow Florida Straits between Key West and Cuba. This current, which is called the Gulf Stream, after passing through the Straits, turns northeastward to approximately parallel the 100 fathom current of the Atlantic Coast.

\*op.cit., Physical Elements of Geography, p. 378.



Within the shallow coastal areas of Key West, a relatively inconspicuous wind induced transfer or drift also occurs. This coastal or littoral drift is toward the west and averages approximately 0.3 knots.\* Although this drift is of such a low velocity to limit its beach erosion or sand moving capacity, it can result in an accumulation of floating debris on the western end of enclosed inlets or other barriers.

In the channel west of Key West, the flood (northerly) and the ebb (southerly) tidal currents average 1 and 1.5 knots, respectively. North of Key West in Man of War Harbor, the tidal currents average 0.8 knot. In Northwest Channel, about 2.5 and 5.5 miles from Key West, the tidal currents average 1.3 and 0.6 knots, respectively.

### Existing Water Uses and Facilities

The waters surrounding the Key West region are presently used for navigation and other activities which limit or preclude their use for urban expansion. A survey of these existing fixed surface activities and facilities follows.\*\*

Boating Channels - The boating channels in the vicinity of the Key West region consist of three alternative intercoastal waterway channels from the mainland, approximately parallel to the line of the Keys and several lateral channels between the islands.

The Intracoastal Waterway between Miami and Key West, located on the western and northern side of the Keys, passes southward through Biscayne Bay, Card, Barnes, and Blackwater Sounds and through connecting waterways in Florida Bay to Moser Channel. From there it is necessary to pass either through Moser Channel and proceed to Key West via Hawk Channel, a distance of 40 miles, or to remain on the northern side of the Keys and proceed to Key West via Big Spanish Channel and the Gulf of Mexico, a distance of 54 miles. The waterway route is through smooth waters, except in Hawk Channel and the Gulf of Mexico.

- a. Hawk Channel, the southern alternative route of the Intracoastal Waterway is between the Florida Reefs which lie approximately five miles offshore and outside the Keys from Cape Florida to Key West, a distance of about 127 miles. It varies in depth from 9 to 34 feet, and is 0.25 miles wide at its narrowest part. Light draft vessels, bound southward and westward, may use this channel with great advantage, avoiding entirely the adverse current of the Gulf Stream and finding comparatively smooth water in all winds, except when passing the large openings between the reefs in southerly winds. These openings are principally between Alligator Reef Light and American Shoal Light. Steamers or sailing vessels with a leading wind may run the courses through this channel without difficulty. Sailing vessels drawing more than 7 feet are advised not to try to beat through without a pilot.

\* op.cit., United States Corps of Engineers, "Beach Erosion Control Study".

\*\* Data on channels and terminal facilities was obtained from the following sources: U. S. Coast and Geodetic Survey, U. S. Coast Pilot #4, Atlantic Coast-Cape Henry to Key West, 1964; U.S. Army Corps of Engineers, Key West Harbor Study (House Document #185), 1917; U.S. Army Corps of Engineers, Intracoastal Waterway from Miami to Key West (House Document #742), 1940; U.S. Army Corps of Engineers, Key West Harbor (Senate Document #106), 1962.

Reports indicate that the current in Hawk Channel usually is parallel to the channel, except alongside the open area between Hawk Channel and Biscayne Bay where a fairly strong cross current exists, particularly on an ebb tide. Possible cross currents should be guarded against, especially in the vicinity of the openings between the Keys.

The channel is marked with lights, lighted buoys, daybeacons, and buoys. However, strangers should not attempt passage at night without local knowledge. Vessels may anchor at night where the bottom is soft. however, holding ground is poor where the bottom is hard.

- b. Big Spanish Channel, the northern alternate route of the Intracoastal Waterway leads northwestward from Bahia Honda through Big Spanish Channel to Harbor Key Bank, thence along the north side of the Florida Keys to Northwest Channel, thence to Key West. The controlling depth for this route was five feet in August, 1963.

The waterway passes through a crooked channel marked by daybeacons southwest to Big Spanish Key. At Harbor Key Bank Light, the waterway enters the Gulf of Mexico, turns westward and follows a direction of 246 degrees for about 28 miles to the lighted bell buoy at the entrance to the Northwest Channel to Key West.

An inside alternative route to Key West branches off to the westward from Big Spanish Channel, about 0.5 miles north of No Name Key, and passes south of Porpoise Key, and winds through a narrow and crooked channel between the smaller Keys northward of U.S. Highway 1. In August, 1963, the controlling depth in the channel was three feet. The irregular line of daybeacons marking the channel for the most part are broken off or missing, have pointers missing, or are hard to identify. Fresh to strong winds from any direction may change the depth of the channel in a short period of time.

- c. Key West Main Ship Channel, is the only deep-draft approach to Key West. The depth is 30 feet from the Straits of Florida to a turning basin off the Naval Operating Base which was deepened to 34 feet by the Navy. The controlling depths are published in the Notice to Mariners. The channel is well marked by lighted ranges, a light, and buoys.
- d. Key West Northwest Channel is a medium-draft passage between Key West Harbor and the Gulf of Mexico. In August, 1963, the controlling centerline depth was 14 feet. Vessels drawing up to 14 feet can pass directly across the reefs from the Gulf of Mexico to the Straits of Florida by way of Northwest Channel and Main Ship Channel. The Gulf end of the channel is shifting westward.

The jetties on either side of the Gulf entrance to Northwest Channel are 0.3 to 0.5 mile from the centerline of the channel, and only the outer part of the jetty shows above low water. The channel is marked by lighted ranges, and lighted and unlighted buoys. The inner range is hard to identify until within a mile of the front light.

Smith Shoal, located 4.5 miles northward of the northward entrance to Northwest Channel, is covered 11 feet and marked by a light which also marks the northern approach to the channel. In 1961, a coral head covered 11 feet and was located about 3.2 miles south-southwestward of the light.

- e. Key West Southeast Channel, is marked by buoys and by the easterly edge of a red sector in the Key West Light. Depths over the coral heads in the channel are 14 to 18 feet, and it is not recommended for drafts greater than 13 feet. The course through the channel is 321 degrees for Key West Light.
- f. Key West Southwest Channel, is a convenient approach to Key West from south-westward, which has been swept to a depth of 23 feet, and is marked by buoys. In April, 1961, this depth was confirmed for mid-channel. A general course, following the aids along the southerly edge of a red sector in Key West Light, leads to the outer anchorage and Main Ship Channel.
- g. Key West West Channel, a passage leading westward from Key West between the Keys and outer reefs, is deep and fairly well marked. It is used by small boats bound toward the Dry Tortugas.
- h. Calda Channel, leads northward from Man of War Harbor to the open waters of the Gulf. The channel is narrow and crooked, but is well marked by daybeacons and a light at the northerly end. The controlling mid-channel depth was five feet in August, 1963.
- i. Barque Channel, a marked channel with a depth of 8 feet, leads around the north end of Fleming Key.
- j. Key West Harbor to Garrison Bight Channel, passes through the Naval Restricted Area. The channel is about 75 yards in width and extends from the northwest corner of the U.S. Naval Station Annex eastward beneath the Fleming Key Bridge along the north shore of the U.S. Naval Station Annex, the U. S. Naval Seaplane Base - Heliport, and the north and east shores of the Trumbo Point Navy Housing area to Garrison Bight.



- k. Key West Harbor to Key West Bight Channel also passes through a Naval Restricted Area 25 feet south of the Navy Annex piers on the north side of the bight. The channel is 12 feet deep and 150 feet wide extending about 3,000 feet from the 30-foot main ship channel easterly into Key West Bight; which has an irregular shaped turning basin 12 feet deep, and a granite mound breakwater 800 feet long along the northern side.
- l. Man of War Harbor to Garrison Bight Channel the eastern edge of which forms the western boundary of the restricted seaplane landing area east of Fleming Key. The channel is eight feet deep and 100 feet wide from deep water of the Barque Channel extending along the north and east sides of Fleming Key to and into Garrison Bight. It is approximately 3.75 miles in length.
- m. Cow Key Channel, located between Stock Island and Key West, is marked by bush stakes and had a controlling mid-channel depth of two feet in August, 1963. The channel is narrow. Shallow-depth draft craft can pass through the highway bridges between the Keys. The bridges have 16 foot spans with a clearance of eight feet. North of the bridges, the channel is unmarked and difficult to follow.
- n. Boca Chica Channel with a centerline controlling depth of 13 feet in August, 1963, from Hawk Channel to the Naval Air Station Basin on the west side of Boca Chica Key, is marked by lighted and unlighted buoys and daybeacons. An overhead power cable has a clearance of 60 feet across the channel. The basin provides a good hurricane anchorage for small vessels.

#### Terminal and Transport Facilities

- a. Key West Harbor is located 145 miles southwestward of Miami Harbor. The harbor proper lies in front of the City of Key West and is protected on the eastern side by the island and on the other sides by reefs and sand flats. The harbor is entered through breaks in the reef by five principal channels with depths of 13 to 30 feet, and by several minor channels.

The submarine basin to the south and three of the nine terminals on Key West Island, located north of Key West Bight, are owned by the U. S. Government. The City dock, about 0.7 mile northwestward of Key West Bight, has 500 feet of berthing space and a 100-foot small boat wharf at the south end. There are no facilities on this dock at present. The oil wharf just south of the City dock, has several warehouses and two transit sheds for petroleum products. One deep water wharf owned by the Mallory Line remains for commercial shipping.

- b. Man of War Harbor, which is north of the City has depths of 19 to 26 feet. This is the best and usual quarantine anchorage, protected against heavy seas by Frankfort and Pearl Banks, coral banks on the west and Fleming Key on the east.
- c. Key West Bight, is a sheltered area about 1,500 feet in diameter, and is the principal center of commercial boating activity in the Florida Keys. In August, 1963, the depth of the basin west of Key West Bight was 19 feet, with 7 feet at the fuel pumps. Facilities include five shrimp and commercial fishing boat terminals, two barge terminals, one marine railway, one marine salvage yard, and one fueling and icing terminal. Key West Bight is home port for an estimated 25 to 30 permanent year-round shrimp boats in the Key West area fleet, and 60 to 75 commercial fishing craft. From 250 to 300 shrimp boats use the bight as an operating base during the winter shrimping season. It also serves as a storm refuge for shrimp boats from other localities shrimping in Tortugas grounds. As many as 350 shrimp boats frequently berth in the bight during bad weather on the Tortugas grounds. An area at the west end of Key West Bight is suitable for pleasure boats to dock.\*
- d. Garrison Bight, located on the north side of the City is the anchorage of most of the recreational boats. The depth into the basin of Garrison Bight in 1963, was 4 1/2 feet and 3 to 7 feet within the basin. The Key West Yacht Club is in Garrison Bight. An overhead power cable across the entrance to Garrison Bight has a clearance of 34 feet.

Marina facilities are located south of the Highway 1 bridge in Cow Key Channel. This small marina has gasoline, fresh water, ice, restrooms, boat rental, and some marine hardware available. Hull and engine repairs can be made.

- e. Safe Harbor, four miles eastward of Key West, is on the south side of Stock Island. The entrance channel had a controlling centerline depth of 17 feet in August, 1963, and depths of 20 to 30 feet in the harbor. Broken pilings of former daybeacons constitute obstructions at the channel entrance. There are shrimp-packing facilities in the harbor and a marina with two launching ramps where hull and engine repairs can be made. Gasoline, diesel fuel, fresh water, ice, provisions, restrooms, and showers, and berthing with electricity with 17 to 26 feet alongside are available. Pilotage, customs, and other services are the same as for Key West.

\*ibid., "Intracoastal Waterway Study," p. 13.

- f. Boca Chica Basin, located five miles eastward of Key West is the site of a Naval air station. It is accessible through Boca Chica Channel, with a centerline controlling depth of 13 feet, in August of 1963, from Hawk Channel to the Naval Air Station Basin, on the west side of the Key which is marked by lighted and unlighted buoys and daybeacons. An overhead power cable has a clearance of 60 feet across the channel. The basin provides a good hurricane anchorage for small vessels.

#### Other Surface Uses

There are various other designated areas in the ocean surrounding Key West which may influence the form of the future growth of the City, these include:

- a. Naval Restricted Areas, have been established which limit navigation and other non-military activities:
- (1) All waters within one hundred yards of the U.S. Naval Station, beginning at a point one hundred yards due south of the south end of Whitehead Street and extending westerly and northerly around the U. S. Naval Station to the northern end of the U. S. Coast Guard Base.
  - (2) All waters within one hundred yards of the U. S. Naval Station Annex, the U.S. Naval Seaplane Base-Heliport, and the north and east shores of the Trumbo Point Navy Housing area.
  - (3) All waters within one hundred yards of Fleming Key.
  - (4) A naval seaplane restricted area, into which entry is prohibited, is north of Key West between Fleming Key and Sigsbee Park.
  - (5) Naval operation danger areas in the Straits of Florida and Gulf of Mexico westward of Key West. They include operational training areas in the waters of the Straits of Florida, southwest, west, and northwest of Key West. Also, four circular bombing and strafing target areas west of Marquesas Keys, two and three miles in diameter. The pattern of these fixed water uses are shown on the following diagram.

#### Potable Water

Water is probably the most essential single factor that influences development in every urban area. An adequate and economical water supply is necessary for human consumption, sanitation, industrial purposes, and for recreation.



The lack of availability and the high cost of providing fresh water in the Key West region has historically been a major deterrent to urban development in the area. Residents relied upon rain catchment, distillation, and at times were forced to purchase water from the mainland until 1957 when an 18-inch pipeline was constructed through joint financing of the Navy and the Florida Keys Aqueduct Commission. The peak capacity of this system is 6,510,000 gallons per day with a storage capacity of 12 million gallons.

In 1960, the per capita consumption rate was 80 gallons per day, which includes a 10 per cent allowance for line losses, which is appreciably below that prevailing in other Florida cities. This low consumption rate is due primarily to the high cost in the Key West region, but also to the small amounts of landscaping, due to the confined land area and the characteristics of the soil.\*

Although the lack of an adequate, inexpensive, fresh water supply is a deterrent to urban development of the Key West region, this limitation will be somewhat ameliorated with the completion of a desalinization plant now under construction on Stock Island. However, the high cost of water will remain a problem for future urbanization.

## MICRO CLIMATE

The climatic pattern of the Key West Region is determined by such factors as its latitude and continental location as well as cyclonic storms and their associated air masses. The various factors whose collective influences will influence the configuration of development in the Key West area include solar radiation, rainfall, prevailing winds, and storms. A survey of the characteristics of these factors and an analysis of some of the possible influences on urban development in the Key West area follows.

Prevailing Winds - The table on the following page shows the monthly average speed and direction of the winds in the Key West area for 1964.\*\*

It can be seen that the prevailing winds in the Key West area are primarily from the easterly semi-circle with velocities ranging from 8 to 13 miles per hour. This wind induces swells and westward littoral currents of approximately one-half foot a second in the Key West vicinity.\*\*\*

\* Atomic Energy Commission, "Feasibility Study of a Dual-Purpose Nuclear Reactor Power Plant for the Florida Keys," 1964, p. 111-117.

\*\* op.cit., "Coast Pilot #4".

\*\*\* op.cit., "Key West Beach Erosion Control Study," p. 12.



FIXED SURFACE WATER USES

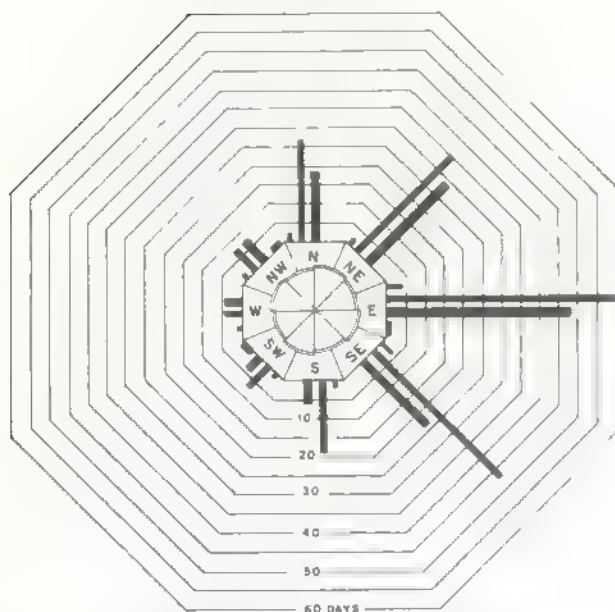
-  FIXED SURFACE USES
-  POTENTIAL AREAS FOR URBAN EXPANSION
-  EXISTING LAND AREAS



**Table 2**  
**Wind Speed and Direction by Month**

<u>Month</u>	<u>Average Speed</u>	<u>Direction</u>
January	10.7	NE
February	10.6	"
March	11.1	"
April	11.3	ESE
May	9.3	"
June	8.6	SE
July	9.0	ESE
August	8.1	"
September	9.0	"
October	10.1	ENE
November	10.7	"
December	10.5	NE

**WIND DIAGRAM**

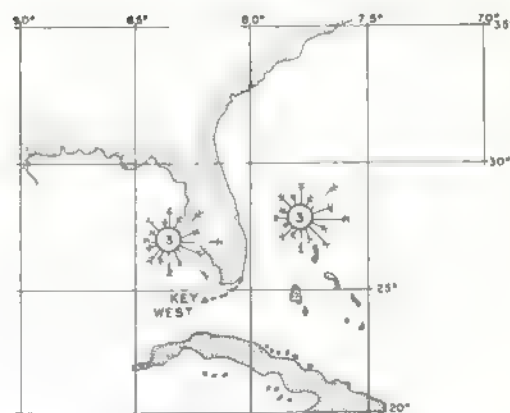


**AVERAGE DIRECTION, DURATION AND VELOCITY OF WINDS  
FOR ONE YEAR AT KEY WEST, FLORIDA**

VELOCITIES	MPH
—	0 TO 5
—	6 TO 10
—	11 TO 20
—	20 OR MORE

BASED ON HOURLY READINGS OVER TWELVE-YEAR PERIOD BY THE  
UNITED STATES WEATHER BUREAU AT KEY WEST, FLORIDA.

**PREVAILING WINDS  
ATLANTIC & GULF COASTS**



THE WIND ROSE IN EACH 5° SQUARE SHOWS THE YEARLY AVERAGE WINDS THAT HAVE PREVAILED WITHIN THAT SQUARE. THE ARROWS FLY WITH THE WIND. THE LENGTH OF THE ARROW MEASURED FROM THE OUTSIDE OF THE CIRCLE AS DEMONSTRATED ON THE SCALE BELOW, GIVES THE PERCENT OF THE TOTAL NUMBER OF OBSERVATIONS IN WHICH THE WIND HAS BLOWN FROM OR NEAR THE GIVEN DIRECTION. THE NUMBER OF FEATHERS SHOWS THE AVERAGE FORCE OF THE WIND ON THE BEAUFORT SCALE. THE FIGURE IN THE CENTER GIVES THE PERCENTAGE OF CALMS.

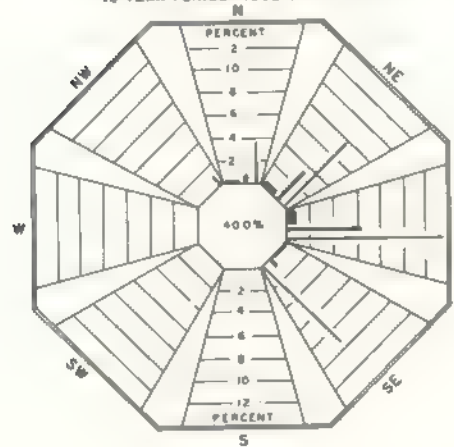




## SWELL DIAGRAM

IN THE SWELL DIAGRAM THE LENGTH OF THE BAR DENOTES THE PERCENT OF THE TIME THAT SWELLS OF EACH TYPE HAVE BEEN MOVING FROM OR NEAR THE GIVEN DIRECTION. THE FIGURE IN THE CENTER OF THE DIAGRAM INDICATES THE PERCENT OF CALMS.

SWELL DATA BASED ON OBSERVATION FOR 10 YEAR PERIOD-1932-1942.



— LOW SWELLS (1-6 FT)  
 — MEDIUM SWELLS (6-12 FT)  
 — HIGH SWELLS (OVER 12 FEET)

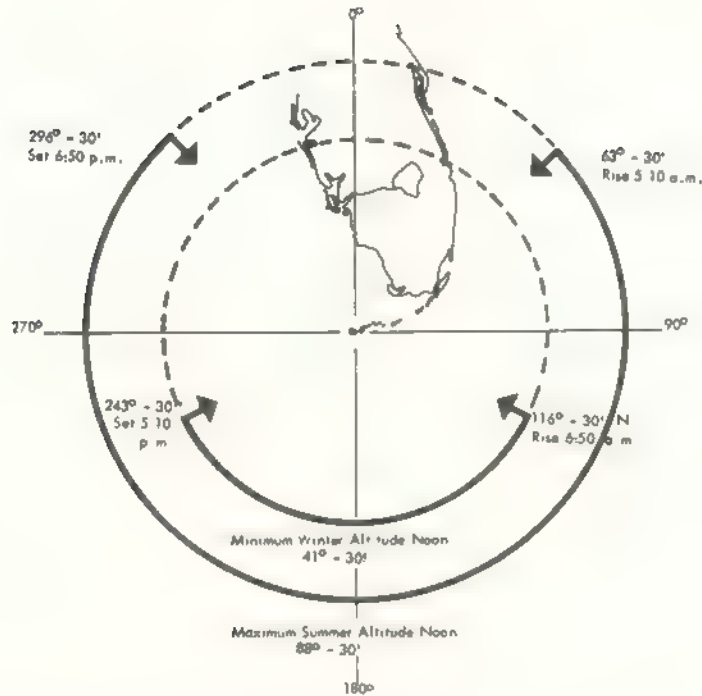
THE SWELL DIAGRAM APPLIES TO THE GULF-OF-MEXICO AREA BOUNDED BY THE NORTH COAST OF CUBA AND LATITUDE 25° NORTH, AND BY LONGITUDES 81°-85°

Consequently, to eliminate dead water or debris pockets, channels should be oriented in a north-south direction to insure water exchange by the flood and ebb tidal currents (15° and 170° true, respectively).<sup>\*</sup> If channels are oriented in an easterly direction they should be designed without dead ends, or without dead ends on their eastern or up-wind side.<sup>\*\*</sup>

Also, to minimize the effects of air pollution, activities which may emit various types of pollutants into the atmosphere should be located on the downwind or western portion of the planning area.

<sup>\*</sup> U.S. Coast and Geodetic Survey, "Atlantic Coast of North American Tidal Tables, 1966" p. 106.

<sup>\*\*</sup> College of Engineering, University of Florida, Gainesville, Florida. "Bay-Fills and Bulk-head Lines," (Leaflet #105) 1959.



Solar Radiation - Latitude determines the direction, intensity, and duration of the solar radiation received in the Key West area. The diagram above shows maximum and minimum sun conditions at the time of the summer and winter solstice, respectively."

Temperatures average approximately 76 degrees. The highest recorded temperature experienced in the area was 95 degrees and the lowest was 46 degrees; August and January are the hottest and coolest months, respectively.

The duration and intensity of solar radiation received in the Key West area would indicate the major rooms of structures should be oriented in a southeasterly direction with openings protected from the heating effects of the summer sun. The southeasterly exposure would also take maximum advantage of the prevailing winds in the area. Consequently, the street and lot pattern should be designed to allow structures to take maximum advantage of this.

Precipitation - Precipitation in the Key West area averages approximately 40 inches annually. The wet season is from July to October, and the dry season from December to March. September, with an average of almost seven inches, is the wettest month. February and March, with slightly over one inch of rainfall, are typically the driest months. Snow, sleet, and fog do not occur in the region. \*\*

\* Ramsey and Sleeper, Time Saver Standards, p. 42.

\*\* "U.S.Coast Pilot #4", p. 169.

Most hurricanes which affect the Key West area are formed as warm moist air over tropical sea areas in the vicinity of the Lesser Antilles. A minority have been formed in the Caribbean. They typically proceed first in a westerly to north-westerly direction gradually turning northward to northeastward. Severe hurricanes have struck the Key West area from all directions, from southwest through south and east to northeast, as shown on the following diagram.

**JUNE - AUGUST**

**SEPTEMBER - NOVEMBER**

KEY WEST

MATECUMBE KEY

LONG KEY

PORT LAUDERDALE

FORT LAUDERDALE

FORT MYERS

WEST PALM BEACH

SCALE IN MILES

0 25 50 75

**HURRICANE PATHS**

PATHS OF TROPICAL STORMS OF HURRICANE INTENSITY THAT HAVE PASSED WITHIN APPROXIMATELY 150-MILE RADIUS OF KEY WEST FROM 1900 TO 1955 INCLUSIVE

\*op.cit., "Beach Erosion Control Study."

Although damage is incurred due to winds and flooding and to the accompanying heavy rainfall, it is estimated that 75 per cent of all damage is done by tidal flooding.\*

The tidal elevations which are superimposed on the normal lunar tides are due to the following factors:

- a. Reduced Atmospheric Pressure, in the "eye" of the storm causes a "sucking up" of water of approximately one foot per inch of atmospheric pressure differences.
- b. Wave action, caused by hurricane winds usually generate faster than the hurricane itself and thus travel as swell waves in all directions. The highest of the waves generated are in part a function of the free fetch distance of the wind action over the water surface. The waves on the right side of the hurricane and running in the direction of the forward motion of the storm are generally the highest and thus the effect of waves on a coast will be highest when the hurricane approaches perpendicular to the coast. When the waves enter shallow water they peak up, eventually break, and consequently increase from four to six feet to the tidal level toward the coast (wave set-up). Since Key West is relatively close to the continental shelf on the south and east, the wave set-up is not as critical a factor as in coastal areas with a low shallow approach.\*\*
- c. Shear Stress Between Wind and Water, hurricane winds passing over water surface exert pressure which transports surface water in the wind direction. In deep water the surface elevation is little affected by these wind forces because a compensating return flow occurs in deeper water layers. Dredging of shoals for fill material should result in improvement of the storm tide situation because pile-up by wind is inversely proportional to water depth. Increased offshore depth also makes it easier for water to flow back after the storm.
- d. Fluctuation of Barometric Pressure and Wind Velocity, also generates variations in sea level which may not exceed one foot in deep water but may be generally amplified in shallow offshore waters.
- e. The Shoreline Configuration, is also responsible for considerable variations in the height of the storm tides. Storm tides can penetrate through inlets into bays and bights and can then greatly increase in height as the water is reflected toward funnel-shaped dead ends. Funnel-shaped shorelines should be avoided or relief canals established at the narrow end of the funnel for release of piled up water. The existing northern shoreline of area has many funnel-shaped configurations without relief canals at focal points which make the flood tides approaching from the north particularly dangerous.

\* Coastal Engineering Laboratory, University of Florida, Gainesville, Florida. "Storm Tides as Related to Topography," (Bulletin #109) 1962, p. 45.

\*\* ibid., pp. 47-50.



The collective effects of these hurricane tidal forces have resulted in the following abnormal tides in the Key West area:

<u>Storm</u>	<u>Maximum Wind</u>	<u>Minimum Barometric Pressure</u>	<u>Tide Elevation</u>
1909 - passed 5 miles south in an easterly direction	NE 74 mph	28.50 inches	-
1910 - passed 35 miles west in northerly direction	100 mph gusts	28.48 inches	7.2 feet unverified
1919 - passed 15 miles south in westerly direction	75 to 120 for 17 hours	28.81 inches	7.2 feet unverified
1944 - passed 75 miles west in NE direction	66 mph	29.11 inches	3.8 feet verified
1948 - passed 8 miles east in NE direction	120 mph	28.45 inches	6 feet unverified
1960 - passed approximately 100 miles north in NW direction	65 mph	29.28 inches	3 feet verified
1966 - passed over Key West in W-SW direction	130 mph	-	-

It can be seen that the maximum confirmed tide of record is 3.8 feet. The unverified tides of 7.2 feet probably represented high water marks and contained wind, tide and wave run-up.\*

In view of the hurricane tidal levels that can be expected from a major hurricane in the Key West area, the United States Corps of Engineers has recommended that the future urban development in the Key West area be located at a minimum elevation of eight to nine feet above mean sea level. Urban construction below this minimum elevation may result in short-run savings, but will result in long-run net losses in property damage and possible loss of life. Zoning lands controlling minimum height and location of urban construction and other land use controls should be carefully examined in light of the hazards involved.

\*op.cit., "Beach Erosion Control Study." p. 14.

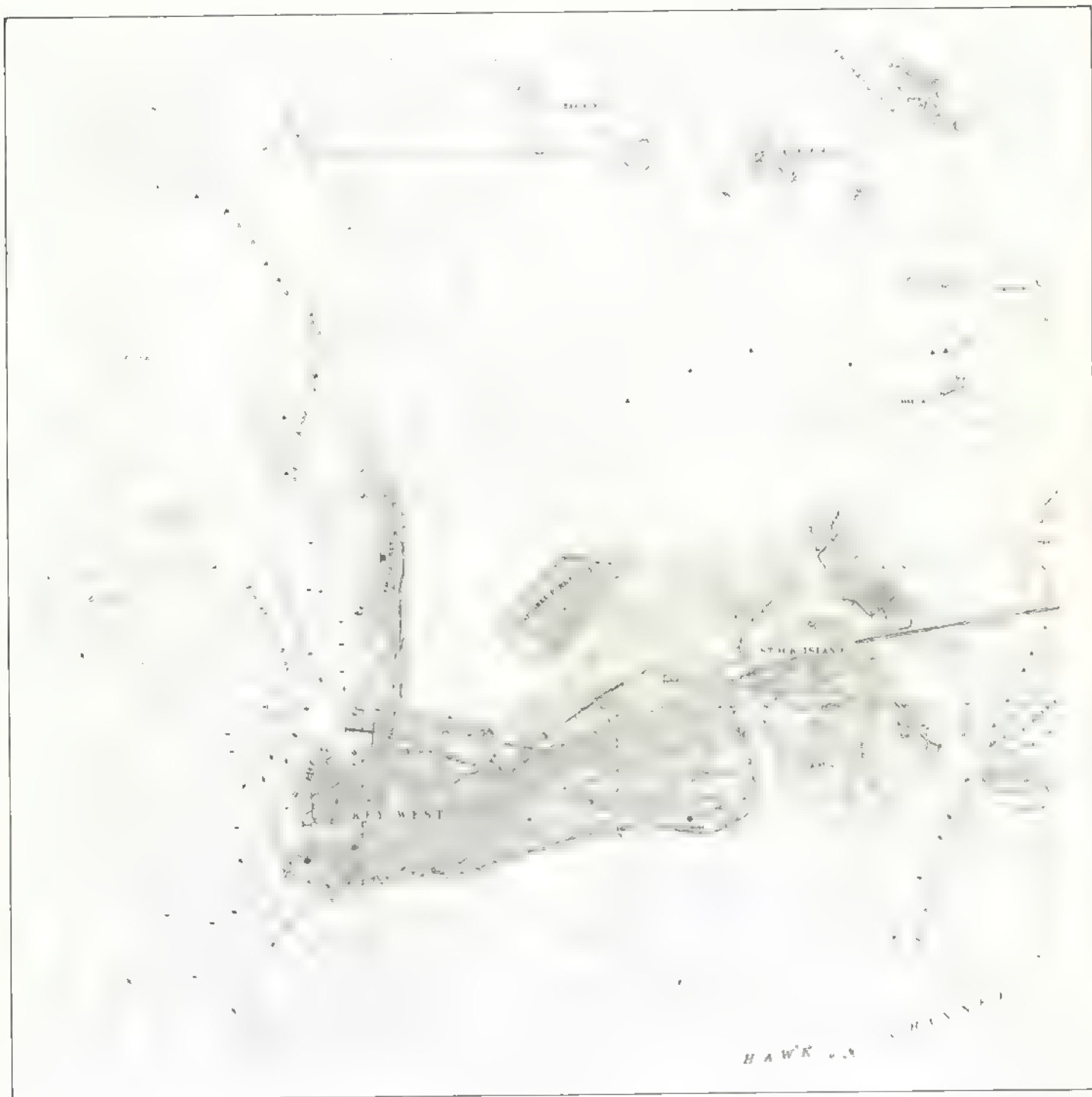
## NATURAL LIMITATIONS ON URBAN DEVELOPMENT

In the preceding three sections of the survey of the Key West region, the physiographic and hydrographic characteristics which determine the suitability of land for urban development have been analyzed. The following limitations which affect the urban expansion of the area have been identified:

1. The Key West region is underlain by an emerged limestone coral reef which is covered with a thin layer of marl or peat although the underlying rock appears at the surface in numerous outcroppings. The area is nearly level, however, natural drainage is rapid with water moving down rapidly through the porous limestone. Vegetation is difficult to maintain in certain areas due to the limestone and marl materials and/or saline conditions that the plants must grow in.
2. The elevation of the land in the Key West area imposes a severe limitation on urban development. Urban construction should be prohibited on lands lying less than eight feet above mean sea level.
3. Submerged fill materials are available in unlimited quantities on the submerged bottoms north of Key West Island.
4. Due to the flood and ebb tide directions of 15 and 170 degrees, respectively in the area, navigation and high tide relief channels should be planned in a north-south direction to eliminate siltation.
5. Ocean currents and drifts in the Key West vicinity are not of such a velocity to constitute an erosion problem and due to the lack of littoral material up wind to the east, the movement of sand is negligible.
6. Much of the ocean surface surrounding Key West is currently in use for various activities which limit its potential for urban expansion.
7. An adequate, dependable, and inexpensive source of fresh water is not available in the Key West region. This natural limitation severely restricts the future expansion of the area.
8. Since the prevailing winds come from the easterly semi-circle, urban activities which produce smoke, noise, odors, or other nuisance should be located in the western portion of the planning area. Also to eliminate dead water or debris pockets, channels should be oriented in a north-south direction.
9. Due to the intensity and duration of solar radiation in the area, major rooms of structures should be oriented in a southeasterly direction. Consequently, the infrastructure should be designed to facilitate this orientation.

10. The area is subject to the effects of cyclonic storms which typically approach from the southeast but may however, include winds from all directions. To ameliorate the effects of these storms, it is recommended that urban growth be directed to the north of the islands. Fill in this area would reduce the free fetch distance between the land area and the shoals to the north, lower the height of wave set-up by removing fill material from the northern approaches, and finally new fill areas could be designed to eliminate the existing funnel-shaped configurations which would eliminate wave focal areas.

The following alternative pattern of development is recommended to optimize the various physiographic and hydrographic determinants of the Key West area identified in this study.



OPTIMUM URBAN FORM



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## SURVEY OF EXISTING LAND USE

One of the most basic of all planning studies, the survey of existing land use, provides information on which all future projections and plans are based. In anthropomorphic terms, existing land use can be called the "body" of the city as shaped by its thoroughfares or "skeletal framework".

In essence, the study of existing land use is the recording of the manner in which ground space is utilized. Thus, through the consideration of existing land use and other basic research materials, it is possible to construct a quantitative assessment of the physical environment and to gain an overview of problems to be faced and potentials that can be realized to guide in the preparation of future plans.

## METHODOLOGY

This analysis of existing land use in the Key West Planning Area is designed to provide a summation and assessment of data found on the Existing Land Use Maps. These maps include:

1. A black and white reproducible existing land use map at a scale of 1" = 400'.
2. One hand colored existing land use map at a scale of 1" = 400'.
3. One reproducible generalized existing land use map at a scale of 1" = 800'.

### Existing Land Use

Initial land use data was compiled as part of the "Aedes Aegypti Eradication Through Sanitation Improvement" program in March, 1965. A sample field check was conducted to determine the accuracy of the data after the land uses had been transferred onto a planning base map. A summary of this survey appears in subsequent sections of this report.

Additional field surveys were carried out to:

1. Update land use data in areas where new construction was evident.
2. Complement Aedes Aegypti information in the parts of the Planning Area not surveyed in the mosquito control program.
3. Correct Aedes Aegypti information in areas where inaccurate or only partial data was available or where additional information was needed to complete the land use classification system used.

In addition to a planning base map showing all property lines, aerial photographs taken in June, 1966, were used to ascertain accurate locations for all uses. A final sample field survey was conducted in October, 1966, to insure accuracy in recording types and locations of land uses, drafting techniques and base map information.

### Land Use Classification System

All land uses in the Key West Planning Area are classified under four major headings with several sub-categories under each heading. They are as follows:

**Residential Use:** A parcel used for housing and accessory uses, such as patios, off-street parking, etc., divided into four sub-categories.

**Commercial Use:** A parcel used for general business, office, service or other commercial use where goods or services are made available to the general public, divided into ten sub-categories. Off-street parking facilities with a capacity of less than 75 vehicles are shown as part of the principal use.

**Industrial Use:** A parcel used for manufacturing, processing, wholesaling, storage, transporting or other similar activity where goods or services are produced or distributed, divided into six sub-categories.

**Public or Semi-Public Use:** A parcel used for publically owned and operated activities or other activities performing a public or quasi-public function, such as churches, cultural facilities, etc., divided into nine sub-categories.

Vacant lands are identified as those parcels not in a public right-of-way or water area where no land use is indicated. Mixed land uses (more than one type of land use on a single parcel) are indicated by a diagonal slash across the lot and appropriate land use designations assigned to each portion of the lot.

Military operations occupy a significant amount of land in Key West and involve a variety of different kinds of activities (such as barracks, on-base housing, post exchange, recreational areas, etc.), as well as purely military land uses. Precise information regarding the location of different types of activities on major military posts is not recorded for the following reasons:

1. All major military posts are literally "walled-off" from the remainder of the city, and all access points are carefully guarded and controlled. Consequently, the most significant impact on the land use pattern of the City of Key West occurs near the entrances and exits to the bases rather than as a result of the location and types of activities on the bases.
2. The City of Key West has no control over the use of land on military bases, and precise knowledge of the land use pattern on the military bases is not necessary in formulating plans and effectuation procedures for the City and the remainder of the planning area.

#### Accuracy of Aedes Aegypti Land Use Data

Land use data gathered during the mosquito control program was prepared on a series of cards, each card covering an area of approximately one block. Base maps indicating property or building lines were not used in the survey; land use locations were recorded on the basis of estimated property lines hand-drawn in the field. Consequently, locations of land uses were interpreted from the Aedes Aegypti data in the process of transferring the information onto a planning base map, with the aid of aerial photographs and field checks as stated previously.

The land use coding system used for the Aedes Aegypti program was satisfactory for comprehensive planning purposes.

Residential uses were distinguished on the basis of the number of dwelling units in each structure, and distinction was made between mobile homes on individual lots and mobile home parks. The names of all non-residential uses were written in longhand on the survey cards. This information was easily translated to the land use classification system.

Of 772 uses surveyed in the sample check, a total of 43 errors were found, indicating the Aedes Aegypti data to be about 95 per cent correct. Inaccurate recording of mixed uses, which are normally difficult to detect from the outside survey, accounted for over one-half (55.8%) the total number of errors. Only four incorrect land uses were found, and only fifteen existing uses were found not to be recorded. Overall accuracy of the Aedes Aegypti land use data is considered to be satisfactory for purposes of this planning program.



<u>Planning Analysis Areas Surveyed</u>	<u>Total No. of Uses Surveyed</u>	<u>Total Errors</u>	<u>Per Cent Inaccurate</u>	<u>Incorrect Land Use</u>	<u>Type of Errors Land Use Not Shown</u>	<u>Mixed Use Not Shown</u>
01	81	2	2.5%	0	1	1
02	38	7	18.4%	1	1	5
03	217	23	10.6%	2	10	11
04	112	7	6.3%	1	2	4
05	33	1	3.0%	0	1	0
06	96	1	1.0%	0	0	1
07	108	22	1.9%	0	0	2
08	79	0	0.0%	0	0	0
09	8	0	0.0%	0	0	0
Total	772	43	5.6%	4	15	24

The greatest degree of error occurred in Planning Analysis Area 02 and 03, to a much lesser extent, in Area 04. These areas comprise most of the oldest sections of Key West where crowded conditions, converted structures and other problems frequently occur that complicate land use identification. Little or no field information was available from the Aedes Aegypti program for Planning Analysis Areas 10 to 17, and these areas were not tabulated for purposes of determining the accuracy of land use data.

#### Definition of Terms - Existing Land Use

Essential to the understanding of this report is a knowledge of the terminology of existing land use. The terms that describe the various sub-categories of land use are defined as follows: (major land use category descriptions have been previously presented).

Single-Family - Signifies the presence of a structure which is designed for single-family occupancy.

Mobile Home - Single-family structures of lightweight construction which are designed to be transportable on their own wheels.

Duplex - A single structure which has been originally designed or has been converted to house two families in separate units.

Multi-Family - Single structures housing three or more families in separate units (e.g., apartment houses, condominiums).

Shoppers' Goods - Goods characterized by infrequent purchase and high price (e.g., clothing, furniture, appliances).

Convenience Goods - Items of frequent need (e.g., groceries, drugs, hardware, notions).

Eating and Drinking - Establishments engaged in the sale of prepared food and/or drink, including, generally, facilities for on-site consumption.

Services - Personal and business services (e.g., barbers, repair shops, including also major medical and health centers).

Offices and Professional - Administrative or other office type uses (e.g., firm headquarters, banks, doctors' offices, law offices, architects' offices, etc.).

Commercial Amusement - Private amusement facilities (e.g., theaters, bowling alleys, etc.).

Automotive and Marine - Establishments engaged in the sales and service of automobiles and boats (not including major shipbuilding and repair facilities).

Service Stations - Facilities engaged primarily in the activity of dispensing fuel to motor vehicles including, also, minor repair functions.

Parking - (a) Commercial - off-street parking lots with a capacity of 75 or more spaces provided by commercial establishments for their customers; and (b) Public and semi-public - off-street parking for the general public.

Hotel-Motel - A structure providing lodging and, sometimes, meals for transients.

Transportation - Privately-owned facilities for the transfer of passengers or cargo or maintenance of equipment of major transportation systems (primarily, bus terminals).

Wholesaling and Warehousing - Facilities for the storage of large quantities of goods or materials for future use or sale to a retailer.

Open Storage - Storage of goods or materials in an area which is unprotected from the weather.

Tank Storage - Storage of liquid or gaseous fluids in tanks.

Light Industry - An intensive manufacturing use which has a minimum of adverse influences on nearby non-industrial areas (e.g., production of precision instruments and optics, printing and publishing industries, bakeries, etc.).

Medium-Heavy Industry - Manufacturing which, because of such inherent characteristics as noise, glare, the emission of noxious fumes and the generation of heavy vehicular traffic as a result of a need to receive raw materials and ship products in bulk, has an adverse influence on nearby non-industrial use.

Cultural - Facilities for the appreciation of the arts, including historic uses (e.g., Libraries, art galleries, museums, etc.).

Parks, Playgrounds, and Beach Facilities - Facilities for outdoor recreation.

Military - Facilities controlled by a branch of the United States Armed Forces.

Religious - Uses intended primarily for religious worship including, also, cemeteries.

Service Organizations - Uses of a service or welfare orientation including the Red Cross, Salvation Army, Boy Scouts, Veterans, fraternal, civic, and political organizations.

Government Buildings and Properties - Government owned structures (city, county, state or federal) for primarily administrative or protective use including, also, major publicly owned transportation facilities (e.g., airport).

Utilities - Structures or equipment related to such public services as water, sanitary sewerage, electricity, and gas.

Educational - Educational facilities including public, private, and parochial schools.

### Planning Analysis Areas

The Key West Planning Area is subdivided into a series of Planning Analysis Areas. The major purpose of this delineation is to establish sub-units within the Planning Area for which detailed analysis and special planning considerations may be necessary and to facilitate the handling of statistical data for this and subsequent planning reports. Such sub-units are developed to coincide with discernible neighborhood boundaries,\* and may also be referred to as "neighborhood study areas" or simply "neighborhoods". The major commercial core of Key West and its environs is delineated as a separate planning analysis area.

### Criteria Used to Establish Planning Analysis Area Boundaries

The City of Key West has been previously subdivided for planning purposes by three sources:

1. U. S. Bureau of Census Enumeration Districts, delineated for the purpose of collecting population and housing data.
2. "Aedes Aegypti Eradication Through Sanitation Improvement" program, which established boundaries for the purpose of mosquito control.
3. City of Key West Planning Areas, established to delimit logical groupings of areas for routine planning purposes.

\*The neighborhood is considered to be the major residential planning unit.

The boundaries from all three sources were considered in developing Planning Analysis Areas for the current comprehensive planning program. In addition, several other criteria were used as follows:

1. Presence of major streets.
2. Other physical boundaries, such as shorelines, limites of land fill, etc.
3. Change in the pattern of land uses.
4. Change in the pattern of structural conditions and/or general age of development.
5. To coincide with political boundaries or boundaries of restricted U.S. Government reservations.

A total of 17 Planning Analysis Areas (PAA) are delineated. PAA 01 through PAA 15 comprise the corporate areas of Key West. The total area of PAA 13 - 15 is U. S. Government reservations within the City, while PAA-12 embodies the section of Stock Island within the corporate area. PAA-17 is the remainder of Stock Island south of U.S. 1, and PAA-16 encompasses Raccoon Key or Key Haven subdivision.

The criteria used in establishing each PAA boundary is itemized in the table on the following pages.



Major Criteria Used

<u>PAA No.</u>	<u>Direction Boundary Faces</u>	<u>U.S. Census Enum. District</u>	<u>Aedes Aegypti Boundary</u>	<u>City of Key West Planning Area</u>	<u>Major Street</u>	<u>Other Physical Boundaries</u>	<u>Land Use Pattern</u>	<u>Political or Other Government Boundary</u>
01	N	X	X	X			X	X
	E	X	X		X		X	
	S					X		
	W	X	X	X				X
02	N	X		X	X		X	
	E	X	X		X		X	
	S	X					X	
	W	X	X	X				X
03	N					X		
	E	X	X	X	X			X
	S	X	X		X		X	
	W	X	X		X		X	
04	N	X	X		X		X	
	E	X	X	X	X			
	S					X		
	W	X	X		X		X	
05	N and E	X	X	X	X	X		X
	S	X			X		X	
	W	X	X	X	X			
06	N	X			X		X	
	E	X	X		X			
	S					X		
	W	X	X	X	X			

Major Criteria Used

<u>PAA No.</u>	<u>Direction Boundary Faces</u>	<u>U. S. Census Enum. District</u>	<u>Aedes Aegypti Boundary</u>	<u>City of Key West Plan- ning Area</u>	<u>Major Street</u>	<u>Other Physical Boundaries</u>	<u>Land Use Pattern</u>	<u>Political or Other Government Boundary</u>
07	N E S W	X X X X	X X X X	X	X X X X	X	X X	
08	N E S W	X X X	X X	X	X X	X X	X	X
09	N E S W	X X	X X		X X	X X	X X	X
10	N E S W	X				X X X X	X X X X	
11	N E S W	X	X	X		X X X		X
12	N E S W	X X	X	X X	X	X X X		X X

### Major Criteria Used

PAA. No.	Direction Boundary Faces	U.S. Census Enum. District	Aedes Aegypti Boundary	City of Key West Plan- ning Area	Major Street	Other Physical Boundaries	Land Use Pattern	Political or Other Government Boundary
13	N E S	X	X	X		X X X		X
14	N E S W	TOTAL IN CITY			X	X X X	X	X
15	N E S W				X	X X X	X	X
16	N E S W					X X X X		X
17	N E S W	TOTAL IN PLANNING AREA				X X X X		X

## HISTORY OF DEVELOPMENT

Key West's development pattern has been centered around its maritime setting throughout its recorded history. The island was first claimed for the Crown of Spain during the era of Spanish exploration of the New World. Situated only ninety miles north of Havana, Cuba, a major base of operations for Spanish explorers, Cayo Hueso (Bone Key), later renamed Key West, was awarded to Juan Pablo Salas in 1815 for meritorious service to the Spanish Crown. In 1821, the year the United States purchased Florida from Spain, Salas sold the island to John W. Simonton for two thousand dollars.

During the period of Spanish control and for a few years thereafter, the island functioned as a pirate haven. Operating from the Key West sanctuary, pirate vessels were able to prey on shipping operating through the Straits of Florida as well as in the Gulf of Mexico and the Atlantic. In 1824, the U. S. Government dispatched Commodore David Porter to the island, where he routed the pirates and established military barracks.

Early development patterns on the island were established with military fortifications and public squares as a focal point. Four military establishments were constructed at different points on the island, three of which are currently standing and are preserved in public areas of the City. Mallory Square, at the island's northwestern tip, contained the old Customs House, and is used as a public square today. Jackson Square, which appeared on Key West maps as early as 1829, still houses the Monroe County Court House and other public and semi-public uses.

The western half of the island, particularly the northwestern quarter, had the highest natural elevation as well as an open view of the sea. It was in this area that the permanent civilian settlement first became established. An early plat, dated 1829, showed development on the island contained within an area bounded approximately by Angela Street on the south, Emma Street on the west, Front Street on the northwest, the old island shoreline on the north, and White Street on the east.

During the ensuing decades, Key West grew in population, receiving a considerable influx of migrants from Cuba. It was sustained economically from military operations, commercial fishing, salvage operations from shipping wrecked on nearby reefs or by tropical storms, and in later years, a flourishing cigar industry.

In 1912, Henry Flagler completed his overseas railway into Key West, which was intended to capitalize on Key West's close proximity to Latin American countries exporting tropical fruits. Flagler constructed large cargo facilities on land fill just north of the island's old northern shoreline to transfer cargo from ships to his railroad cars. The area is used today as the U.S. Naval Station Annex and the Navy Seaplane Base.

A hurricane in 1935 destroyed the railroad, and it was reconstructed as the Overseas Highway (U.S. #1), in 1938. This opened the island, as well as the rest of the Florida Keys, to tourism.



The cigar industry shifted from Key West to Tampa in the 1890's and early 1900's, but the City today still relies on its maritime and climatic features, as well as its unique location in relation to Cuba and Latin America, for its basic economic endeavors.

## FACTORS AFFECTING EXISTING LAND USE

Were Key West residents, in the absence of strict land use controls, able to freely choose the optimum location for their residences and places of business, the resulting land use pattern would reflect the never-ending interplay between socio-economic values and capabilities, the dictates of topography and sub-soil characteristics and the attraction of major transportation routes. It is interesting to note that, until 1952, and the adoption of Key West's first zoning ordinance, these very factors were the major determinants of the location of land use types in the Key West Planning Area. Even today, because present zoning policies generally are influenced by pre-existing patterns of growth, such basic forces are still in effect. In essence then, an investigation of existing land use must include a look at forces which interact to shape this pattern of development.

### Location and Physical Setting

An in-depth analysis of the location and physical setting of the Key West Planning Area was given in a previous report. However, as a key to the understanding of land development, it is well to present a summary of these earlier findings.

The Key West Planning Area consists basically of six keys or islands; Key West, Stock Island, Fleming Key, Dredger's Key, Raccoon Key, and Cow Key. In geographic location, these keys emerge from Florida Bay at the southern end of the Florida Plateau, approximately 160 miles southwest of Miami and 90 miles north of Havana, Cuba.

The Keys themselves are a combination of an outcropping of Miami oolite limestone and fill which has been dredged by man. Elevations in the Key West Planning Area typically vary between 4 and 10 feet with the highest elevations occurring near the western end of Key West.

### Physiographic Problems

Where other, more typical communities are concerned with such barriers to future development as major highways, railroads, and adjacent incorporated areas, the Key West Planning Area is bounded by the surrounding waters of the Atlantic Ocean, Gulf of Mexico, and Florida Bay. Even this, however, has not been sufficient to halt urban expansion. Traditionally, as existing undeveloped land is converted to a specific use, salt ponds and other submerged lands are filled to provide room for additional growth.\*

\* The subject of land fill was treated extensively in two previous reports by Milo Smith + Associates, "Physiographic Characteristics of the Key West Planning Area: A Survey and Analysis of Their Influences on Urban Development," and "Recommended Land Use Controls for the Development of Submerged Lands in the Key West Planning Area".

The Key West Planning Area has always been faced with problems associated with its low lying land. The history of periodic inundation by storm driven tides has been long. However, an additional factor that will be increasingly more significant as urbanization continues is the problem of handling run-off from heavy rains. Although soils in the Key West Planning Area are characteristically highly permeable in their natural state, compaction to provide stable building sites and the construction of impermeable asphalt streets and parking lots coupled with a lack of significant change in grade in low lying areas compounds the difficulty of handling run-off. The problem of beach erosion, familiar to most of Florida's coastal communities, is also critical.

While soil conditions in most of the Key West Planning Area appear to offer little deterrent to the construction of buildings and streets, the lack of inherent fertility limits the suitability of naturally occurring soils for landscaping.

### Transportation

Historically, major forms of transportation serving the Key West Planning Area have undergone greater changes over the years than have such systems on the mainland. Due to its island isolation, Key West was first reached only by ship, then by a combination of ship and railroad, and finally at the present time, by primarily automobile, truck, and bus traffic arriving via the Overseas Highway. Today, to handle heavy traffic loads, the Key West Planning Area has as its major arterial streets: U. S. #1 through Stock Island to Key West, Roosevelt Boulevard, Truman Avenue, Flagler Avenue, Simonton Street, Duval Street, Whitehead Street, White Street, First Street, Bertha Street, and President Kennedy Drive.

### Socio-Economic Outline

In 1960, Key West had a population of 33,956 including 18,872 males and 15,084 females. The presence of the Armed Forces has had a significant effect upon local population characteristics. As a result, Key West has a younger population than either the State of Florida or the entire United States. The median length of time spent by Key West residents in the pursuit of education is 10.8 years. Per capita income for residents of Monroe County amounted to \$2,200, ranking it twelfth highest of Florida's 67 counties.

The economy of the Key West Planning Area is oriented toward three major functions: (1) fishing (primarily shrimp), (2) tourism, and (3) military. Manufacturing is almost non-existent due to increased transportation costs. While the largest percentage of the work force is employed in services (30%), governmental activities account for the largest percentage of wage and salaries paid (25%).

## Land Use Controls

The legal basis for the two major controls of land use -- zoning and subdivision regulations -- stems from the exercise of a concept known as police power. Essentially, police power is the power of a governmental body to regulate in order to insure the public health, safety, morals, and general welfare. While zoning determines the location, character, and extent of land use for any district, subdivision regulations control the actual physical layout of residential areas. In effect, then, the purpose of land use controls is to protect the character of a given district by preventing incompatible uses of property, to lessen street congestion, to avoid undue concentration of population, to insure adequate light and air, and to assure that future development will occur in a sound, orderly manner.

To provide controls over land use, the City of Key West adopted its first zoning ordinance in 1952, adopting subdivision regulations ten years later.

## KEY WEST PLANNING AREA EXISTING LAND USE ANALYSIS

Two principal foci for the existing land use analysis are presented on the following pages:

1. a summary report for the entire Key West Planning Area; and,
2. an analysis prepared by individual planning analysis areas.

As has been mentioned before, the nature of major military installations makes it both impossible and unnecessary to provide a detailed accounting of such properties. Consequently, in tabulations concerning existing land use and structural conditions in the Key West Planning Area, only enclaves of military property (property surrounded by civilian development) are included.

As a component of basic planning research, this presentation seeks to provide data on which all future plans will be based.

## Summary of Existing Land Uses

Residential use makes up more than one-quarter (26.1%) of the development existing in the Key West Planning Area. Equivalent acreage for this percentage is 865.1 acres. Of the types of existing residential use, by far the most significant is single-family land use which accounts for 5.918 acres or 15.7 per cent of all developed land in the planning area. The use of mobile homes is of second highest frequency with acreage and per cent totals of 161.2 and 4.9, respectively. Multi-family development ranks third with duplex-type use occupying the position of least importance in terms of residential land development.

Commercial activities account for 239 acres or 7.2 per cent of all developed land in the Key West Planning Area. As might be expected, most commercial activity is located in the Key West CBD and in strip development or shopping centers along U.S. 1 (Roosevelt Boulevard). It is interesting to note that, in terms of relative rankings of degree of land development, hotel-motel, parking, and automotive and marine uses occupy the most prominent positions.

Industrial uses comprise 93 acres or 2.8 per cent of all developed area. In descending order of acreage used, the three most extensive industrial uses are open storage, medium to heavy industry, and wholesaling and warehousing. Industrially, the most important of the Key West Planning Analysis Areas are PAA 3, PAA 12, and PAA 17. Of these, PAA 17 on Stock Island has the greatest acreage devoted to industrial use.

Public and Semi-Public uses occupy the greatest per cent of Key West Planning Area development (46.9%). In all, 1,557.9 acres are devoted to public and semi-public uses. As might be expected, military uses alone account for 29.2 per cent of all developed land. Other extensive public - semi-public uses include government buildings and properties, and parks, playfields, and beach facilities.

Streets as expressed by right-of-way acreage comprise 563.7 acres or 17.0 per cent of all Key West Planning Area development.

As may be seen on the following table, 72.4 per cent of the Key West Planning Area is developed. Undeveloped acreage is almost evenly divided between vacant land and inland water.

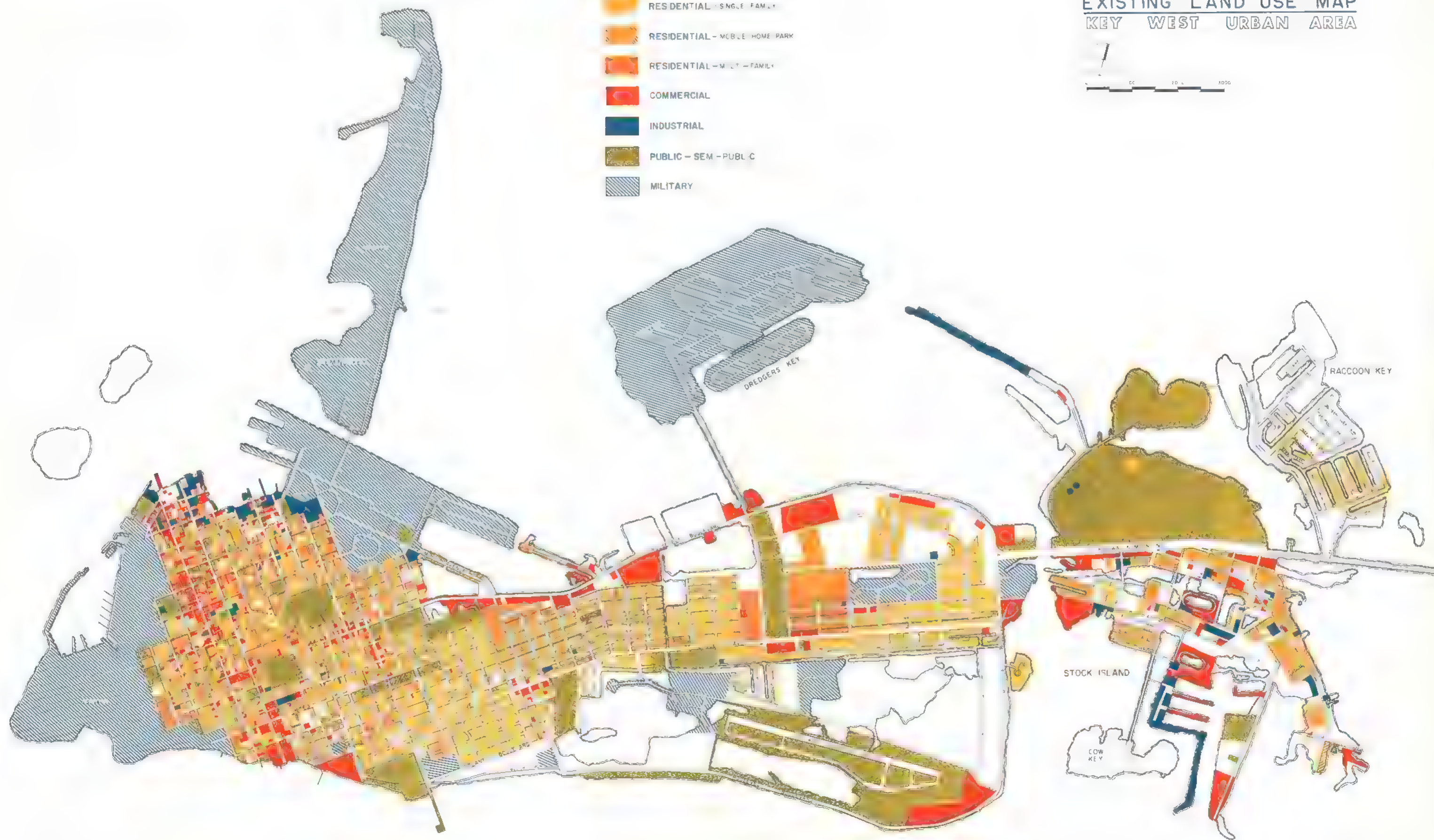


Planning Analysis Area - Total  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	865.1	26.1%
Single-Family	519.8	15.7%
Mobile Home	161.2	4.9%
Duplex	61.0	1.8%
Multi-Family	123.1	3.7%
<u>Commercial</u>	239.0	7.2%
Shoppers' Goods	13.7	0.4%
Convenience Goods	12.0	0.4%
Eating and Drinking	26.6	0.8%
Services	9.9	0.3%
Offices and Professional	7.2	0.2%
Automotive and Marine	30.8	0.9%
Service Stations	12.5	0.4%
Commercial Amusement	25.9	0.8%
Parking	38.1	1.1%
Hotel-Motel	62.3	1.9%
<u>Industrial</u>	93.6	2.8%
Wholesaling and Warehousing	21.7	0.6%
Open Storage	36.3	1.1%
Tank Storage	4.3	0.15%
Transportation	1.0	0.03%
Light Industry	8.1	0.2%
Medium to Heavy Industry	22.2	0.7%
<u>Public</u>	1,557.9	46.9%
Parks, Playfields, Beach Facilities	244.4	7.4%
Cultural	3.4	0.1%
Religious	47.8	1.4%
Government Buildings & Properties	206.5	6.2%
Educational	62.1	1.9%
Service Organizations	13.1	0.4%
Utilities	8.0	0.2%
Parking	2.3	0.1%
Military	970.3	29.2%
<u>Streets</u>	563.7	17.0%
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	3,319.3	72.4%
<u>Total Undeveloped</u>	1,259.2	27.6%
Vacant Land	686.6	15.0%
Inland Water	570.6	12.6%
 TOTAL AREA	 4,578.5	 100.0%

-  RESIDENTIAL - SINGLE FAMILY
-  RESIDENTIAL - MOBILE HOME PARK
-  RESIDENTIAL - MULTI-FAMILY
-  COMMERCIAL
-  INDUSTRIAL
-  PUBLIC - SEMI-PUBLIC
-  MILITARY

# EXISTING LAND USE MAP KEY WEST URBAN AREA



## PLANNING ANALYSIS AREA ONE (Key West)

### Boundary Description

North - Petronia Street  
East - Simonton Street  
South - Atlantic Ocean and Naval Station Boundary  
West - Naval Station Boundary

### Major Streets

North-South - Whitehead, Duval, Simonton Streets  
East-West - Truman, United, South Streets

### Existing Land Use

Residential development comprises 57 acres or 51.5 per cent of developed land in PAA 1, most of which is in single-family use.

Commercial uses total 10.4 acres or 9.4 per cent of developed land in PAA 1. The largest proportion of commercial use is in hotel-motel and eating and drinking categories which are concentrated in the Simonton-South Street vicinity near the Atlantic Ocean.

Industrial use is negligible in PAA 1, comprising only 0.1 per cent of the developed area.

Public and semi-public space occupies 10.0 acres or 9.0 per cent of the developed area of PAA 1, the most extensive single sub-category being educational use (the junior college).

Access to PAA 1 is provided by 32.9 acres of streets which comprise 30.0 per cent of the developed area.

As a whole, the 120.3 acres of Planning Analysis One are almost completely developed, yielding only 9.8 acres for future development.



Planning Analysis Area One  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	57.0	51.5%
Single-Family	40.7	36.8%
Mobile Home	0.3	0.3%
Duplex	6.7	6.0%
Multi-Family	9.3	8.4%
<u>Commercial</u>	10.4	9.4%
Shoppers' Goods	0.0	-
Convenience Goods	0.6	0.6%
Eating and Drinking	2.9	2.6%
Services	0.7	0.6%
Offices and Professional	0.0	-
Automotive and Marine	0.8	0.7%
Service Stations	0.7	0.6%
Commercial Amusement	0.0	-
Parking	0.5	0.5%
Hotel-Motel	4.2	3.8%
<u>Industrial</u>	0.2	0.1%
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.2	0.1%
Transportation	0.0	-
Light Industry	0.0	-
Medium to Heavy Industry	0.0	-
<u>Public</u>	10.0	9.0%
Parks, Playfields, Beach Facilities	1.8	1.6%
Cultural	0.8	0.7%
Religious	1.6	1.4%
Government Buildings & Properties	1.5	1.3%
Educational	3.4	2.0%
Service Organizations	0.2	0.4%
Utilities	0.7	0.6%
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	32.9	30.0%
<u>Total Developed</u>	<u>110.5</u>	<u>91.8%</u>
<u>Total Undeveloped</u>	<u>9.8</u>	<u>8.2%</u>
Vacant Land	9.8	8.2%
Inland Water	0.0	-
<b>TOTAL AREA</b>	<b>120.3</b>	<b>100.0%</b>



## PLANNING ANALYSIS AREA TWO (Key West)

### Boundary Description

North - Eaton Street  
East - Simonton Street  
South - Petronia Street  
West - Naval Station Boundary

### Major Streets

North-South - Whitehead, Duval, Simonton Streets  
East-West - Southard, Eaton Streets

### Existing Land Use

Planning Analysis Area Two contains the true central core of Key West. In this area are located the majority of Key West's major downtown retail outlets.

Despite the commercial character of PAA 2, residential uses still occupy a prominent position. Such uses comprise 32.0 per cent of the area's developed land. As is usually the case in Key West, single-family residential development is the most extensive.

Commercial uses in PAA 2 occupy 8.7 acres of land, most of which is adjacent to Duval Street. As might be expected of such an area, the most extensive sub-categories of commercial land use are shoppers' goods, services, and offices and professional.

Industrial uses in PAA 2 are negligible. Tank storage adjacent to the Naval Base and the bus station behind City Hall comprise the total uses in this category.

Public and semi-public uses occupy 12.3 per cent of PAA 2 development. The government buildings and properties sub-category, the most extensive public-semi-public category, includes both City Hall and the Monroe County Court House. Religious and parking uses share the remainder of acreage in this category.

Access to PAA 2 is provided by 15.0 acres of streets comprising 34.0 per cent of PAA 2 development.

Development has absorbed 79.4 per cent of the land area existing in PAA 2, yielding only 11.4 acres for future development.

Planning Analysis Area 2  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	14.1	32.0%
Single-Family	8.7	19.7%
Mobile Home	0.0	-
Duplex	1.7	3.9%
Multi-Family	3.7	8.4%
<u>Commercial</u>	8.7	19.7%
Shoppers' Goods	1.6	3.6%
Convenience Goods	0.8	1.8%
Eating and Drinking	0.9	2.0%
Services	1.4	3.2%
Offices and Professional	1.4	3.2%
Automotive and Marine	0.2	0.5%
Service Stations	0.1	0.2%
Commercial Amusement	0.3	0.7%
Parking	1.1	2.5%
Hotel-Motel	0.9	2.0%
<u>Industrial</u>	0.9	2.0%
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.5	1.1%
Transportation	0.4	0.9%
Light Industry	0.0	-
Medium to Heavy Industry	0.0	-
<u>Public</u>	5.3	12.3%
Parks, Playfields, Beach Facilities	0.0	-
Cultural	0.0	-
Religious	1.6	3.6%
Government Buildings & Properties	3.2	7.3%
Educational	0.0	-
Service Organizations	0.0	-
Utilities	0.0	-
Parking	0.5	1.4%
Military	0.0	-
<u>Streets</u>	15.0	34.0%
<u>Total Developed</u>	<u>44.0</u>	<u>79.4%</u>
<u>Total Undeveloped</u>	11.4	20.6%
Vacant Land	11.4	20.6%
Inland Water	0.0	-
<b>TOTAL AREA</b>	<b>55.4</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA THREE (Key West)

### Boundary Description

North - Gulf of Mexico  
East - Boundary of Naval Station Annex  
South - Eaton Street  
West - Naval Station Boundary

### Major Streets

North-South - Whitehead, Duval, Simonton Streets  
East-West - Eaton, Front Streets

### Existing Land Use

This area is unique in that residential use does not predominate. Of all developed land in PAA 3, 22.0 per cent is residential, most of which is in single-family and duplex use.

The commercial category of existing use is the predominant one in PAA 3 with 24.5 per cent of all developed land in the area being devoted to this use. Of all commercial uses, eating and drinking is the most extensive.

Industrial uses are quite extensive in PAA 3, occupying 24.0 per cent of all the area's developed land. The area's location makes it attractive to water oriented industry. Of all acreage devoted to industrial use in PAA 3, wholesaling and warehousing is the most extensive.

Public and semi-public uses occur to a lesser extent than in most other areas. In PAA 3, 6.3 per cent of all developed land is devoted to this use with the sub-categories of government buildings and properties and utilities occupying the positions of prominence. Adding to land use totals in these sub-categories are the U.S. Post Office, the Key West Convention Center, and the City Electric power plant.

Street rights-of-way occupy 23.2 per cent of all developed land in PAA 3.

Of a total of 111.8 acres in PAA 3, 98.7 acres or 88.2 per cent is developed allowing only 13.1 acres for future expansion.

Planning Analysis Area 3  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	21.8	22.0%
Single-Family	8.5	8.6%
Mobile Home	2.4	2.5%
Duplex	7.5	7.6%
Multi-Family	3.4	3.4%
<u>Commercial</u>	24.2	24.5%
Shoppers' Goods	2.2	2.2%
Convenience Goods	2.4	2.4%
Eating and Drinking	8.7	8.8%
Services	0.9	0.9%
Offices and Professional	2.7	2.7%
Automotive and Marine	1.4	1.5%
Service Stations	2.3	2.3%
Commercial Amusement	0.0	-
Parking	3.6	3.6%
Hotel-Motel	0.0	-
<u>Industrial</u>	28.7	24.0%
Wholesaling and Warehousing	9.4	9.5%
Open Storage	3.7	3.8%
Tank Storage	3.4	3.4%
Transportation	0.6	0.8%
Light Industry	3.6	3.6%
Medium to Heavy Industry	3.0	3.0%
<u>Public</u>	6.1	6.3%
Parks, Playfields, Beach Facilities	0.0	-
Cultural	0.9	1.0%
Religious	0.0	-
Government Buildings & Properties	2.0	2.0%
Educational	0.0	-
Service Organizations	0.0	-
Utilities	1.4	1.5%
Parking	1.8	1.8%
Military	0.0	-
<u>Streets</u>	22.9	23.2%
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	98.7	88.2%
<u>Total Undeveloped</u>	13.1	11.8%
Vacant Land	13.1	11.8%
Inland Water	0.0	-
<b>TOTAL AREA</b>	<b>111.8</b>	<b>100.0%</b>



## PLANNING ANALYSIS AREA FOUR (Key West)

### Boundary Description

North - Eaton Street  
East - White Street  
South - Truman Avenue  
West - Simonton Street

### Major Streets

North-South - White, Simonton Streets  
East-West - Eaton Street, Truman Avenue

### Existing Land Use

In Planning Analysis Area Four, residential uses occupy 50.2 per cent of all developed land in the area. Of these uses, single-family residences occupy the most extensive acreage (53.7 acres or 36.2% of developed area);

Commercial uses occur largely in strips along Simonton and Truman Streets. These uses occupy 4.1 per cent of all developed area in PAA 4 and consist primarily of shoppers' goods, services, hotel-motel, and convenience goods.

Industrial uses occupy the position of least prominence in PAA 4, (1.3 acres or 1.0% of developed area) and include only wholesaling and warehousing and light industry.

Public and semi-public uses comprise 21.9 per cent of all developed area in PAA 4. Religious uses are the most extensive consisting of churches and the Key West Cemetery. Making up the balance of uses in this category are educational uses (1.6% of developed acreage), cultural uses (0.5% of developed acreage) consisting of the municipal library, parks and playfields (0.2% of developed acreage), and service organizations (0.1% of developed acreage)

Street rights-of-way require 33.9 acres or 22.8 per cent of all developed land in PAA 4.

Of 158.1 acres of land in PAA 4, 148.4 are developed (93.8%) yielding only 9.7 acres for future expansion.

Planning Analysis Area 4  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	74.5	50.2%
Single-Family	53.7	36.2%
Mobile Home	0.0	-
Duplex	13.5	9.1%
Multi-Family	7.3	4.5%
<u>Commercial</u>	6.2	4.1%
Shoppers' Goods	1.4	0.9%
Convenience Goods	0.9	0.6%
Eating and Drinking	0.7	0.5%
Services	1.2	0.8%
Offices and Professional	0.0	-
Automotive and Marine	0.1	0.1%
Service Stations	0.6	0.4%
Commercial Amusement	0.0	-
Parking	0.1	0.1%
Hotel-Motel	1.2	0.7%
<u>Industrial</u>	1.3	1.0%
Wholesaling and Warehousing	1.1	0.7%
Open Storage	0.0	-
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.2	0.3%
Medium to Heavy Industry	0.0	-
<u>Public</u>	32.5	21.9%
Parks, Playfields, Beach Facilities	0.3	0.2%
Cultural	0.8	0.5%
Religious	28.9	19.5%
Government Buildings & Properties	0.0	-
Educational	2.4	1.6%
Service Organizations	0.1	0.1%
Utilities	0.0	-
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	33.9	22.8%
<u>Total Developed</u>	<u>148.4</u>	<u>93.8%</u>
<u>Total Undeveloped</u>	<u>9.7</u>	<u>6.2%</u>
Vacant Land	9.7	6.2%
Inland Water	0.0	-
<b>TOTAL AREA</b>	<b>158.1</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA FIVE (Key West)

### Boundary Description

North - Truman Avenue  
East - White Street  
South - Atlantic Ocean  
West - Simonton Street

### Major Streets

North-South - White, Simonton Streets  
East-West - Eaton Street, Truman Avenue

### Existing Land Use

Residential use is the most extensive one in this Planning Analysis Area. In total residential acreage, 75.8 acres or 43.8 per cent is developed. Most of the residential acreage is developed in single-family use (31.9%) with duplex development being the next most extensive (4.3%).

Commercial uses occupy 11.4 per cent of the total developed acreage within PAA 5. Of these uses, the hotel-motel sub-category is the most extensive (7.0% of developed acreage) followed by the eating and drinking sub-category (1.3% of the developed acreage).

Industrial use is negligible in PAA 5 (0.8% of developed acreage) consisting solely of tank storage and light industry.

The amount of acreage devoted to public and semi-public use is surpassed only by that required for residential development and streets. Making up the major portion of use in this category which occupies 33.6 acres (19.3% of developed acreage) are parks, playfields, and beach facilities, (16.4 acres) and educational facilities (13.5 acres). Specifically these uses are Higgs Beach, the Convent of Mary Immaculate, and Memorial Elementary School.

Street rights-of-way occupy 42.8 acres or 24.7 per cent of the total developed area.

As a whole, of 193.1 acres of land available for development within Planning Analysis Area 5, 173.2 acres or 98.6 per cent has been developed yielding 19.9 acres for future expansion.

Planning Analysis Area 5  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	75.8	43.8%
Single-Family	55.3	31.9%
Mobile Home	2.6	1.5%
Duplex	7.4	4.3%
Multi-Family	10.5	6.1%
<u>Commercial</u>	19.7	11.4%
Shoppers' Goods	0.7	0.4%
Convenience Goods	1.1	0.6%
Eating and Drinking	2.3	1.3%
Services	1.2	0.7%
Offices and Professional	1.4	0.8%
Automotive and Marine	0.1	0.1%
Service Stations	0.2	0.2%
Commercial Amusement	0.0	-
Parking	0.6	0.3%
Hotel-Motel	12.1	7.0%
<u>Industrial</u>	1.3	0.8%
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.2	0.2%
Transportation	0.0	-
Light Industry	1.1	0.6%
Medium to Heavy Industry	0.0	-
<u>Public</u>	33.6	19.3%
Parks, Playfields, Beach Facilities	16.4	9.4%
Cultural	0.0	-
Religious	0.7	0.4%
Government Buildings & Properties	2.9	1.7%
Educational	13.5	7.7%
Service Organizations	0.0	-
Utilities	0.1	0.1%
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	42.8	24.7%
<u>Total Developed</u>	<u>173.2</u>	<u>89.6%</u>
<u>Total Undeveloped</u>	19.9	10.4%
Vacant Land	19.9	10.4%
Inland Water	0.0	-
<b>TOTAL AREA</b>	<b>193.1</b>	<b>100.0%</b>



## PLANNING ANALYSIS AREA SIX (Key West)

### Boundary Description

North - Palm Avenue  
East - Palm Avenue  
South - Truman Avenue  
West - White Street

### Major Streets

North-South - White Street, Eisenhower Drive  
East-West - Truman, Palm Avenues

### Existing Land Use

Planning Analysis Area Six is located at the northeastern fringe of the older Key West development as reflected by the small lot sizes and narrow alley and street widths which exist today.

The predominant pattern of land use is residential occupying 41.2 acres or 59.7 per cent of the total developed area. Within this category, the sub-categories of single and multi-family use comprise the major portion of development. Multi-family use (primarily the Navy's Peary Court) predominates with 27.6 per cent of total area development followed closely by single-family residential use which comprises 27.4 per cent of total area development.

The little commercial use that does exist is located primarily along Truman Avenue and White Street. Of all commercial development in PAA 6, (4.9 acres or 7.1% of developed acreage), the predominant sub-categories are parking (2.4 acres) and service stations (1.4 acres).

Industrial use (0.9 acres or 1.3% of developed acreage) is negligible consisting solely of a batching plant located at the intersection of Eisenhower Drive and Palm Avenue.

Public and semi-public uses are also negligible with the total developed acreage devoted to this category being 0.2 acres and consisting of religious and service organizations uses.

Street rights-of-way require 21.7 acres of land, or in other terms, 31.4 per cent of the total developed area in PAA 6.

In Planning Analysis Area Six, development has occurred to the extent of 68.9 acres, or 75.1 per cent of the total area yielding an undeveloped acreage figure of 22.8 acres. Of the undeveloped acreage, only 0.7 acres is land which is vacant and developable, the remainder is inland water.

Planning Analysis Area 6  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	41.2	59.7%
Single-Family	18.9	27.4%
Mobile Home	0.0	-
Duplex	2.3	4.7%
Multi-Family	19.0	27.6%
<u>Commercial</u>	4.9	7.1%
Shoppers' Goods	0.1	0.1%
Convenience Goods	0.5	0.7%
Eating and Drinking	0.0	-
Services	0.0	-
Offices and Professional	0.0	-
Automotive and Marine	0.2	0.3%
Service Stations	1.4	2.1%
Commercial Amusement	0.0	-
Parking	2.4	3.5%
Hotel-Motel	0.3	0.4%
<u>Industrial</u>	0.9	1.3%
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.0	-
Medium to Heavy Industry	0.9	1.3%
<u>Public</u>	0.2	0.5%
Parks, Playfields, Beach Facilities	0.0	-
Cultural	0.0	-
Religious	0.1	0.25%
Government Buildings & Properties	0.0	-
Educational	0.0	-
Service Organizations	0.1	0.25%
Utilities	0.0	-
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	21.7	31.4%
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	68.9	75.1%
<u>Total Undeveloped</u>	22.8	24.9%
Vacant Land	6.7	7.3%
Inland Water	16.1	17.6%
<b>TOTAL AREA</b>	<b>91.7</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA SEVEN (Key West)

### Boundary Description

North - Truman Avenue  
East - Bertha and First Streets  
South - Atlantic Ocean  
West - White Street

### Major Streets

North-South - First, Bertha, White Streets  
East-West - Truman, Flagler Avenues, Atlantic Boulevard

### Existing Land Use

Planning Analysis Area Seven reflects more recent Key West development.

Residential use is the predominant category (46.9% of developed acreage) being occupied largely by single-family development comprising 39.3 per cent of all developed area in PAA 7. Multi-family use (primarily the George Allen Apartments) and duplex development are also important components to residential development in this area.

Commercial uses exist to the extent of 13.8 acres occupying 6.5 per cent of the total developed area within PAA 7. Extensive commercial uses include parking, eating and drinking, and automotive and marine.

Industrial uses are negligible, occupying only 0.3 acres and consisting solely of light industry.

Public and semi-public uses comprise 13.9 per cent of developed land in PAA 7. The most extensive uses in this category are educational use (Key West Junior High School), military use, and parks, playfields, and beach facilities (Bayview Park).

Street rights-of-way occupy 68.8 acres or 32.4 per cent of the total area of PAA 7.

Of a total area of 274.4 acres, area in PAA 7 is developed to the extent of 212.2 acres or 77.3 per cent. Of the undeveloped area, 4.0 acres are inland water yielding 52.8 acres of developable land.

Planning Analysis Area 7  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	99.6	46.9%
Single-Family	83.3	39.3%
Mobile Home	0.4	0.2%
Duplex	8.3	3.8%
Multi-Family	7.6	3.6%
<u>Commercial</u>	13.8	6.5%
Shoppers' Goods	0.3	0.1%
Convenience Goods	0.6	0.3%
Eating and Drinking	2.4	1.1%
Services	0.6	0.3%
Offices and Professional	0.1	0.1%
Automotive and Marine	2.3	1.1%
Service Stations	1.7	0.8%
Commercial Amusement	0.0	-
Parking	5.6	2.6%
Hotel-Motel	0.2	0.1%
<u>Industrial</u>	0.3	0.3%
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.3	0.3%
Medium to Heavy Industry	0.0	-
<u>Public</u>	29.7	13.9%
Parks, Playfields, Beach Facilities	5.9	2.8%
Cultural	0.0	-
Religious	0.7	0.3%
Government Buildings & Properties	0.8	0.4%
Educational	14.0	6.5%
Service Organizations	0.2	0.1%
Utilities	0.4	0.2%
Parking	0.0	-
Military	7.7	3.6%
<u>Streets</u>	68.8	32.4%
<u>Total Developed</u>	<u>212.2</u>	<u>77.3%</u>
<u>Total Undeveloped</u>	<u>62.2</u>	<u>22.7%</u>
Vacant Land	58.2	21.2%
Inland Water	4.0	1.5%
<b>TOTAL AREA</b>	<b>274.4</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA EIGHT (Key West)

### Boundary Description

North - Gulf of Mexico  
East - President Kennedy Drive  
South - Flagler Avenue  
West - First Street

### Major Streets

North-South - First and Seventh Streets, President Kennedy Drive  
East-West - Roosevelt Boulevard, Flagler Avenue

### Existing Land Use

As in many of the other Planning Analysis Areas, residential land use is the most extensive, occupying 115.9 acres or 55.3 per cent of all developed land in the area. Of the total developed acreage, 43.8 per cent is devoted to single-family use alone.

Commercial uses comprise 13.5 per cent of all developed land in PAA 8. Within this category, the predominant sub-category is automotive and marine use (5.8% of developed acreage).

Industrial uses are negligible (0.5% of developed acreage), being comprised of wholesaling and warehousing and light industry.

Public and semi-public uses occupy 2.8 per cent of the total developed acreage and are composed solely of the following sub-categories: religious, government buildings and properties, educational, and service organizations.

Street rights-of-way require 58.5 acres or 27.9 per cent of the total developed area in PAA 8.

With reference to Planning Analysis Area 8 as a whole, 209.4 acres out of a total of 369.7 acres have been developed. As 98.6 acres of the remaining undeveloped territory is inland water, 61.7 developable acres remain for future expansion.



Planning Analysis Area 8  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	115.9	55.3%
Single-Family	91.9	43.8%
Mobile Home	0.0	-
Duplex	11.9	5.7%
Multi-Family	12.1	5.8%
<u>Commercial</u>	28.3	13.5%
Shoppers' Goods	1.1	0.5%
Convenience Goods	2.3	1.1%
Eating and Drinking	2.5	1.2%
Services	1.3	0.6%
Offices and Professional	0.5	0.2%
Automotive and Marine	12.1	5.8%
Service Stations	1.9	0.9%
Commercial Amusement	0.9	0.5%
Parking	2.8	1.3%
Hotel-Motel	2.9	1.4%
<u>Industrial</u>	0.9	0.5%
Wholesaling and Warehousing	0.6	0.3%
Open Storage	0.0	-
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.3	0.2%
Medium to Heavy Industry	0.0	-
<u>Public</u>	5.8	2.8%
Parks, Playfields, Beach Facilities	0.0	-
Cultural	0.0	-
Religious	2.7	1.3%
Government Buildings & Properties	2.1	1.0%
Educational	0.8	0.4%
Service Organizations	0.2	0.1%
Utilities	0.0	-
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	58.5	27.9%
<u>Total Developed</u>	<u>209.4</u>	<u>56.6%</u>
<u>Total Undeveloped</u>	<u>160.3</u>	<u>43.4%</u>
Vacant Land	61.7	16.7%
Inland Water	98.6	26.7%
<b>TOTAL AREA</b>	<b>369.7</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA NINE (Key West)

### Boundary Description

North - Roosevelt Boulevard  
East - Roosevelt Boulevard  
South - Flagler Avenue  
West - President Kennedy Drive

### Major Streets

North-South - President Kennedy Drive  
East-West - Flagler Avenue, Roosevelt Boulevard

### Existing Land Use

Residential land use is the most extensive category for PAA 9 with 142.8 acres developed (40.1% of total developed acreage). Within this category, single and multi-family categories are pre-dominant. Single-family residences comprise 19.8 per cent of the total developed acreage in PAA 9 while multi-family uses, consisting largely of U.S. Navy housing and the Poinciana Apartments, comprise 14.0 per cent of the total developed acreage. Acreage devoted to mobile homes, primarily the Palm Haven Trailer Park, is also significant, occupying 6.3 per cent of total PAA 9 development.

Commercial development includes Sears Town and other smaller businesses which, when combined total 55.8 acres or 15.7 per cent of PAA 9 development. Commercial activity generally borders Roosevelt Boulevard. Regarding a single type of commercial use, the sub-category of hotel-motel occupies the most extensive land area (23.9 acres).

Industrial activity is almost non-existent consisting of only 0.5 acres in open storage and wholesaling and warehousing uses.

Public and semi-public uses are quite extensive in PAA 9, totaling 67.9 acres or 19.1 per cent of the total developed area. Primary uses in this major category include a large park and playfield at the intersection of Roosevelt Boulevard and President Kennedy Drive, Poinciana Elementary School, the City Hall Annex, and the U.S. Navy Hospital.

Acreage required for street rights-of-way totals 88.7 acres or 24.9 per cent of all development within PAA 9.

Out of a total area of 405.3 acres for PAA 9, 355.7 acres or 87.7 per cent is developed. Of the remaining undeveloped acreage, 7.9 acres is inland water yielding 41.7 acres of land available for future expansion.

Planning Analysis Area 9  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	142.8	40.1%
Single-Family	70.6	19.8%
Mobile Homes	22.4	6.3%
Duplex	0.0	-
Multi-Family	49.8	14.0%
<u>Commercial</u>	55.8	15.7%
Shoppers' Goods	5.0	1.4%
Convenience Goods	0.5	0.1%
Eating and Drinking	1.8	0.5%
Services	1.0	0.3%
Offices and Professional	1.1	0.4%
Automotive and Marine	1.0	0.3%
Service Stations	2.9	0.8%
Commercial Amusement	0.0	-
Parking	18.6	5.2%
Hotel-Motel	23.9	6.7%
<u>Industrial</u>	0.5	0.2%
Wholesaling and Warehousing	0.1	0.05%
Open Storage	0.4	0.15%
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.0	-
Medium to Heavy Industry	0.0	-
<u>Public</u>	67.9	19.1%
Parks, Playfields, Beach Facilities	38.2	10.7%
Cultural	0.0	-
Religious	0.0	-
Government Buildings & Properties	1.4	0.4%
Educational	11.0	3.1%
Service Organizations	0.2	0.1%
Utilities	0.3	0.1%
Parking	0.0	-
Military	16.8	4.7%
<u>Streets</u>	88.7	24.9%
<u>Total Developed</u>	<u>355.7</u>	<u>87.7%</u>
<u>Total Undeveloped</u>	<u>49.6</u>	<u>12.3%</u>
Vacant Land	41.7	10.3%
Inland Water	7.9	2.0%
<b>TOTAL AREA</b>	<b>405.3</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA TEN (Key West)

### Boundary Descriptions

North - Flagler Avenue  
East - Atlantic Ocean  
South - Airport boundary and the Atlantic Ocean  
West - Bertha Street

### Major Streets

North-South - Bertha Street, Roosevelt Boulevard  
East-West - Flagler Avenue

### Existing Land Use

The residential use that exists is, for the most part, single-family. Total residential uses occupy 54.3 acres of land or 26.4 per cent of all developed land in PAA 10. Of this total, 53.9 acres are developed for single-family use.

Commercial uses are located adjacent to Bertha Street and Flagler Avenue and total 5.0 acres or 2.4 per cent of the developed area of PAA 10. Predominant commercial uses include parking, automotive and marine, and eating and drinking.

Industrial use is negligible (0.2 acres) being entirely made up of light industry.

The public and semi-public category occupies the most extensive land area of PAA 10 (94.7 acres or 46.0% of the developed area). Contributing to this total are Key West High School, church properties, military missile sites, and Smathers Beach.

Streets occupy 51.8 acres of 25.1 per cent of the total developed area of PAA 10.

While total acreage for PAA 10 is 484.3 acres, 169.4 acres of that total is inland water. Thus, although only 206 acres are actually developed, only 108.9 acres remain as developable land.

Planning Analysis Area 10  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	54.3	26.4%
Single-Family	53.9	26.2%
Mobile Home	0.0	-
Duplex	0.2	0.1%
Multi-Family	0.2	0.1%
<u>Commercial</u>	5.0	2.4%
Shoppers' Goods	0.4	0.2%
Convenience Goods	0.6	0.3%
Eating and Drinking	0.9	0.4%
Services	0.3	0.1%
Offices and Professional	0.0	-
Automotive and Marine	0.8	0.4%
Service Stations	0.4	0.2%
Commercial Amusement	0.0	-
Parking	1.6	0.8%
Hotel-Motel	0.0	-
<u>Industrial</u>	0.2	0.1%
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.2	0.1%
Medium to Heavy Industry	0.0	-
<u>Public</u>	94.7	46.0%
Parks, Playfields, Beach Facilities	10.7	5.2%
Cultural	0.0	-
Religious	11.5	5.6%
Government Buildings & Properties	0.8	0.4%
Educational	17.0	8.3%
Service Organizations	0.0	-
Utilities	0.0	-
Parking	0.0	-
Military	54.7	26.5%
<u>Streets</u>	51.8	25.1%
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	206.0	42.5%
<u>Total Undeveloped</u>	278.3	57.5%
Vacant Land	108.9	22.5%
Inland Water	169.4	35.0%
<b>TOTAL AREA</b>	<b>484.3</b>	<b>100.0%</b>



## PLANNING ANALYSIS AREA ELEVEN (Key West)

### Boundary Description

North - Airport Boundary  
East - Atlantic Ocean  
South - Atlantic Ocean  
West - Airport Boundary

### Major Streets

North-South - Roosevelt Boulevard  
East-West - Roosevelt Boulevard

### Existing Land Use

Planning Analysis Area Eleven includes neither residential, nor industrial uses.

Commercial uses occupy 10.0 per cent of all developed land within the area. Of the total commercial acreage, the majority is devoted to hotel-motel use (15.5 acres), with commercial amusement (the bowling alley - 2.0 acres), and eating and drinking (1.2 acres) sub-categories occupying less territory.

Public and semi-public uses which occupy 82.2 per cent of the developed area of PAA 11 include primarily, the Key West International Airport (146.5 acres), Smathers Beach (5.1 acres), and the San Martello Tower (1.7 acres) which is classified as a cultural use.

Street rights-of-way in PAA 11 occupy only 14.3 acres or 7.8 per cent of all of the developed area.

Of 324.2 acres of total area within PAA 11, 186.3 acres have been developed. As 65.1 acres of the remaining undeveloped area is inland water, 72.8 acres remain for future expansion.

Planning Analysis Area 11  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	0.0	-
Single-Family	0.0	-
Mobile Home	0.0	-
Duplex	0.0	-
Multi-Family	0.0	-
<u>Commercial</u>	18.7	10.0%
Shoppers' Goods	0.0	-
Convenience Goods	0.0	-
Eating and Drinking	1.2	0.6%
Services	0.0	-
Offices and Professional	0.0	-
Automotive and Marine	0.0	-
Service Stations	0.0	-
Commercial Amusement	2.0	1.1%
Parking	0.0	-
Hotel-Motel	15.5	8.3%
<u>Industrial</u>	0.0	-
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.0	-
Medium to Heavy Industry	0.0	-
<u>Public</u>	153.3	82.2%
Parks, Playfields, Beach Facilities	5.1	2.7%
Cultural	1.7	0.9%
Religious	0.0	-
Government Buildings & Properties	146.5	78.6%
Educational	0.0	-
Service Organizations	0.0	-
Utilities	0.0	-
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	14.3	7.8%
<u>Total Developed</u>	<u>186.3</u>	<u>57.4%</u>
<u>Total Undeveloped</u>	<u>137.9</u>	<u>42.6%</u>
Vacant Land	72.8	22.5%
Inland Water	65.1	20.1%
<b>TOTAL AREA</b>	<b>324.2</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA TWELVE (Stock Island)

### Boundary Description

North - Gulf of Mexico  
East - Gulf of Mexico  
South - U.S. 1  
West - Gulf of Mexico

### Major Streets

U. S. 1

### Existing Land Use

Residential land use is negligible in PAA 12. Such use consists of one single-family use occupying 1.1 acres of land.

Commercial use is negligible consisting solely of 0.8 acres of automotive and marine use.

Industrial uses are confined to 15.1 acres of open storage.

Public and semi-public uses are, by far, the most extensive occupying 219.3 acres or 87.0 per cent of all developed acreage in PAA 12. Most of the area is devoted to recreational use as a golf course and botanical garden which occupy 65.9 per cent of all developed land in the area. Government buildings and properties such as the Monroe County Hospital provide for the second ranking land use category in terms of total developed area (14.9% of total developed acreage). The remainder of land utilized within this major category includes service organizations, utilities, and parking.

Street rights-of-way occupy only 15.7 acres or 6.2 per cent of the total developed area of PAA 12.

Of 282.6 acres within PAA 12, 252.0 acres are developed yielding 30.6 acres for future expansion.

Planning Analysis Area 12  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	1.1	0.4%
Single - Family	1.1	0.4%
Mobile Home	0.0	-
Duplex	0.0	-
Multi-Family	0.0	-
<u>Commercial</u>	0.8	0.4%
Shoppers' Goods	0.0	-
Convenience Goods	0.0	-
Eating and Drinking	0.0	-
Services	0.0	-
Offices and Professional	0.0	-
Automotive and Marine	0.8	0.4%
Service Stations	0.0	-
Commercial Amusement	0.0	-
Parking	0.0	-
Hotel-Motel	0.0	-
<u>Industrial</u>	15.1	6.0%
Wholesaling and Warehousing	0.0	-
Open Storage	15.1	6.0%
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.0	-
Medium to Heavy Industry	0.0	-
<u>Public</u>	219.3	87.0%
Parks, Playfields, Beach Facilities	166.0	65.9%
Cultural	0.0	-
Religious	0.0	-
Government Buildings & Properties	37.6	14.9%
Educational	0.0	-
Service Organizations	11.5	4.6%
Utilities	3.0	1.1%
Parking	1.2	0.5%
Military	0.0	-
<u>Streets</u>	15.7	6.2%
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	252.0	89.1%
<u>Total Undeveloped</u>	30.6	10.9%
Vacant Land	30.6	10.9%
Inland Water	0.0	-
<b>TOTAL AREA</b>	<b>282.6</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA THIRTEEN (Key West)

### Boundary Description

North - Naval Station Boundary  
East - Naval Station Boundary  
South - Atlantic Ocean  
West - Atlantic Ocean

All land within this area is controlled by the United States Navy. For this reason, detailed land use information is not presented.

The total area of PAA 13 is 208.1 acres.



Planning Analysis Area 13  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	Navy	-
Single-Family		
Mobile Home		
Duplex		
Multi-Family		
<u>Commercial</u>	Navy	-
Shoppers' Goods		
Convenience Goods		
Eating and Drinking		
Services		
Offices and Professional		
Automotive and Marine		
Service Stations		
Commercial Amusement		
Parking		
Hotel-Motel		
<u>Industrial</u>	Navy	-
Wholesaling and Warehousing		
Open Storage		
Tank Storage		
Transportation		
Light Industry		
Medium to Heavy Industry		
<u>Public</u>	208.1	100.0%
Parks, Playfields, Beach Facilities		
Cultural		
Religious		
Government Buildings & Properties		
Educational		
Service Organizations		
Utilities		
Parking		
Military	208.1	100.0%
<u>Streets</u>	Navy	-
<u>Total Developed</u>	<u>Acres</u>	<u>% Total</u>
<u>Total Undeveloped</u>	208.1	100.0%
Vacant Land	0.0	-
Inland Water		
<b>TOTAL AREA</b>	<b>208.1</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA FOURTEEN (Key West and Fleming Key)

### Boundary Description

North - Gulf of Mexico  
East - Gulf of Mexico  
South - Naval Station Annex Boundary  
West - Gulf of Mexico

All land within this area is controlled by the United States Navy. For this reason, detailed land use information is not presented.

The total area of PAA 14 is 415.4 acres.

Planning Analysis Area 14  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	Navy	-
Single-Family		
Mobile Home		
Duplex		
Multi-Family		
<u>Commercial</u>	Navy	-
Shoppers' Goods		
Convenience Goods		
Eating and Drinking		
Services		
Offices and Professional		
Automotive and Marine		
Service Stations		
Commercial Amusement		
Parking		
Hotel-Motel		
<u>Industrial</u>	Navy	-
Wholesaling and Warehousing		
Open Storage		
Tank Storage		
Transportation		
Light Industry		
Medium to Heavy Industry		
<u>Public</u>	397.8	100.0%
Parks, Playfields, Beach Facilities		
Cultural		
Religious		
Government Buildings & Properties		
Educational		
Service Organizations		
Utilities		
Parking		
Military	397.8	100.0%
<u>Streets</u>	Navy	-
	Acres	% Total
<u>Total Developed</u>	397.8	95.7%
<u>Total Undeveloped</u>	17.6	4.3%
Vacant Land	0.0	-
Inland Water	17.6	4.3%
<b>TOTAL AREA</b>	<b>415.4</b>	<b>100.0%</b>

## PLANNING ANALYSIS AREA FIFTEEN (Dredgers Key)

### Boundary Description

North - Gulf of Mexico  
East - Gulf of Mexico  
South - Gulf of Mexico  
West - Gulf of Mexico

All land within this area is controlled by the United States Navy. For this reason, detailed land use information is not presented.

The total area of PAA 15 is 297.0 acres.

Planning Analysis Area 15  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	Navy	-
Single-Family		
Mobile Home		
Duplex		
Multi-Family		
<u>Commercial</u>	Navy	-
Shoppers' Goods		
Convenience Goods		
Eating and Drinking		
Services		
Offices and Professional		
Automotive and Marine		
Service Stations		
Commercial Amusement		
Parking		
Hotel-Motel		
<u>Industrial</u>	Navy	-
Wholesaling and Warehousing		
Open Storage		
Tank Storage		
Transportation		
Light Industry		
Medium to Heavy Industry		
<u>Public</u>	285.2	100.0%
Parks, Playfields, Beach Facilities		
Cultural		
Religious		
Government Buildings & Properties		
Educational		
Service Organizations		
Utilities		
Parking		
Military	285.2	100.0%
<u>Streets</u>	Navy	-
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	285.2	96.0%
<u>Total Undeveloped</u>	11.8	4.0%
Vacant Land	0.0	-
Inland Water	11.8	4.0%
<b>TOTAL AREA</b>	<b>297.0</b>	<b>100.0%</b>



## PLANNING ANALYSIS AREA SIXTEEN (Raccoon Key)

### Boundary Description

North - Gulf of Mexico  
East - Gulf of Mexico  
South - U.S. 1  
West - Gulf of Mexico

### Major Streets

North-South - Key Haven Road  
East-West - U.S. 1

### Existing Land Use

This Key Haven subdivision was designed for single-family residences. At the present time, 26.5 acres or 48.0 per cent of the total developed area is devoted to such residential use.

No commercial use or industrial use exists within PAA 16.

In the public and semi-public category, only land devoted to utility use is developed and that amounts to just 0.5 acres.

Street rights-of-way occupy 28.2 acres or 51.0 per cent of all developed land within PAA 16.

Of the total area of 224.8 acres, 55.2 acres are developed. Of the remaining undeveloped area, however, 42.3 acres consists of inland water, yielding 127.3 acres for future development.

Planning Analysis Area 16  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	26.5	48.0%
Single-Family	26.5	48.0%
Mobile Home	0.0	-
Duplex	0.0	-
Multi-Family	0.0	-
<u>Commercial</u>	0.0	-
Shoppers' Goods	0.0	-
Convenience Goods	0.0	-
Eating and Drinking	0.0	-
Services	0.0	-
Offices and Professional	0.0	-
Automotive and Marine	0.0	-
Service Stations	0.0	-
Commercial Amusement	0.0	-
Parking	0.0	-
Hotel-Motel	0.0	-
<u>Industrial</u>	0.0	-
Wholesaling and Warehousing	0.0	-
Open Storage	0.0	-
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	0.0	-
Medium to Heavy Industry	0.0	-
<u>Public</u>	0.5	1.0%
Parks, Playfields, Beach Facilities	0.0	-
Cultural	0.0	-
Religious	0.0	-
Government Buildings & Properties	0.0	-
Educational	0.0	-
Service Organizations	0.0	-
Utilities	0.5	1.0%
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	28.2	51.0%
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	55.2	24.5%
<u>Total Undeveloped</u>	169.6	75.5%
Vacant Land	127.3	56.6%
Inland Water	42.3	18.9%
 TOTAL AREA	 224.8	 100.0%

## PLANNING ANALYSIS AREA SEVENTEEN (Stock Island)

### Boundary Description

North - U.S. 1  
East - Atlantic Ocean  
South - Atlantic Ocean  
West - Atlantic Ocean

### Major Streets

North-South - Maloney Avenue, Cross Street, Fifth Street  
East-West - U.S. 1, Mac Donald Avenue, Fourth Avenue, Fifth Avenue

### Existing Land Use

Residential land use is the most extensive of all land use categories in PAA 17 with 140.5 acres of developed land. The major residential sub-category in this area is the mobile home category which accounts for 133.1 acres or 43.2 per cent of all development within PAA 17. Single-family residences total only 6.7 acres.

Commercial use is comprised of 41.3 acres or 13.4 per cent of all development within PAA 17. The most extensive use in this category is that of commercial amusement which includes an abandoned dog track and a stock car track. Such uses total 22.7 acres. Automotive and marine use is the second most extensive category, totaling 11.0 acres or 3.6 per cent of all developed area.

Planning Analysis Area Seventeen is the most industrially oriented of all the Planning Analysis Areas. A total of 48.3 acres is devoted to this major land use category. Within this industrial category, medium to heavy industry is the most extensive (18.3 acres) followed by open storage (17.1 acres) and wholesaling and warehousing (10.5 acres).

Public and semi-public uses total 9.1 acres or 3.0 per cent of the total developed area of Planning Analysis Area Seventeen. Within this major category, government buildings and properties occupy the most extensive land area having a developed acreage of 6.9 acres. Other uses within this category include utilities (1.6 acres) and service organizations (0.6 acres).

Street rights-of-way require 68.5 acres or 22.2 per cent of all developed land within this area.

Of the total area of 562.3 acres, 307.7 acres are developed. Of the remaining undeveloped acreage, 137.8 is inland water, yielding 116.8 acres of land for future development.

Planning Analysis Area 17  
Existing Land Use

<u>Land Use Type</u>	<u>Acres</u>	<u>% Developed</u>
<u>Residential</u>	140.5	45.7%
Single-Family	6.7	2.2%
Mobile Home	133.1	43.2%
Duplex	0.5	0.2%
Multi-Family	0.2	0.1%
<u>Commercial</u>	41.3	13.4%
Shoppers' Goods	0.9	0.3%
Convenience Goods	1.7	0.6%
Eating and Drinking	2.3	0.7%
Services	1.3	0.4%
Offices and Professional	0.0	-
Automotive and Marine	11.0	3.6%
Service Stations	0.3	0.1%
Commercial Amusement	22.7	7.3%
Parking	0.0	-
Hotel-Motel	1.1	0.4%
<u>Industrial</u>	48.3	15.7%
Wholesaling and Warehousing	10.5	3.4%
Open Storage	17.1	5.6%
Tank Storage	0.0	-
Transportation	0.0	-
Light Industry	2.4	0.8%
Medium to Heavy Industry	18.3	5.9%
<u>Public</u>	9.1	3.0%
Parks, Playfields, Beach Facilities	0.0	-
Cultural	0.0	-
Religious	0.0	-
Government Buildings & Properties	6.9	2.2%
Educational	0.0	-
Service Organizations	0.6	0.3%
Utilities	1.6	0.5%
Parking	0.0	-
Military	0.0	-
<u>Streets</u>	68.5	22.2%
	<u>Acres</u>	<u>% Total</u>
<u>Total Developed</u>	307.7	54.7%
<u>Total Undeveloped</u>	354.6	45.3%
Vacant Land	116.8	20.8%
Inland Water	137.8	24.5%
<b>TOTAL AREA</b>	<b>562.3</b>	<b>100.0%</b>

## SURVEY OF POPULATION CHARACTERISTICS

### INTRODUCTION

The study of population trends -- past, present, and future -- is one of the elements that is used to assess an area's attributes and limitations. Essentially, such an analysis is needed to establish a framework for the planning of Key West's future physical development.

As to its organization, this report is a two-part analysis. One, existing reference sources are viewed and analyzed to obtain information about a wide range of pertinent population characteristics. Two, results of a special household survey that was conducted in 1966 are presented, along with the inferences and projections that are derived from those results.

### TOTAL POPULATION

Table 1 on the following page presents the first synoptic review of growth in the Key West area by tracing changes that have occurred in the total population by decades since 1900.

The earliest recorded census, taken in 1840, reported that Key West had a resident population of some 688 people. During the ensuing fifty years there was a steady increase in the population, and in 1890 some 18,749 people were cited as residing in the city. Table 1 shows that from 1900 to the present, the population of the area has been subject to great fluctuations. Generally, the City witnessed an absolute decrease in its population between 1900 and 1940 when there was a total of only 12,927 enumerated residents in the Key West area, or in other words, a net decrease of some 4,187 residents.

This decrease in total population is unusual in light of the developments which occurred in the Key West area during that time period. Shortly after the turn of the century, it was announced that the Florida East Coast Railroad would construct a rail connection between Miami and Key West. This project represented what was to be the first physical tie between the Keys and the Florida mainland. The first run on the line between Miami and Key West was in January, 1912. As the statistics show, the construction of the railroad had little, if any, deterrent effects on stopping the pattern of out-migration from Key West.



Table 1  
Key West Growth. 1900 - 1960

	<u>Key West</u>	<u>Numerical</u> <u>Increase</u>	<u>% Increase</u>	<u>State</u> <u>of Florida</u>	<u>Numerical</u> <u>Increase</u>	<u>% Increase</u>
1960	33,956	7,523	28.5%	4,951,560	2,180,255	78.7%
1950	26,433	13,506	104.5%	2,771,305	873,891	46.1%
1940	12,927	96	0.7%	1,897,414	429,203	29.2%
1930	12,831	-5,918	-31.6%	1,468,211	499,741	51.6%
1920	18,749	-1,196	-6.0%	968,211	215,851	28.7%
1910	19,945	2,831	16.5%	752,619	224,077	42.4%
1900	17,114			528,542		

Since 1940, there has been a complete reversal in this migration pattern. In the 1940 to 1950 decade, the city witnessed a growth of some 104% or approximately 10.4% per year. In the 1950-1960 decade, there was once again a significant increase in total population, but it was not near the volume of that which occurred between 1940 to 1950.

Also included in Table 1 are statistics pertaining to the population growth for the entire State of Florida. It is quickly evident that the Key West growth pattern is completely different from the pattern exhibited by the entire State. These major differences in the growth patterns of Key West and the entire State are unquestionably due in part to the atypical geographic conditions in existence in the Key West area. Such atypical conditions dictate one of the primary precautions of this study, namely it cannot be considered proper to make comparisons between the population growth of Key West and other areas, because there are few, if any comparable areas.

Perhaps the greatest cause for the phenomenal growth influx in Key West between 1940 and 1950 was the re-activation of the Naval Station to a primary dispatching point for men and materials during World War II. This statement is supported by the statistics presented on Chart 1 on the following page. This chart shows the percentage age distribution by five year increments in Key West for the years 1940, 1950, and 1960. As the chart shows, the 1940 population was fairly evenly distributed among all age groups. During the next ten years (1940-1950), however, there transpired a great change. This change was most prominent in the 10-34 age groups. The 5-9, 10-14, and 15-19 age groups all exhibited a decrease in their respective proportions of the total population, while the 20-24, 25-29 and 30-34 age groups all showed increases in their share of the total population. The 1960 line on Chart 1 shows that the Key West population is again becoming more normally distributed with percentage increases in the 5-19 age brackets and percentage decreases in the 20-34 age brackets.

CHART I  
AGE DISTRIBUTION BY % OF POPULATION

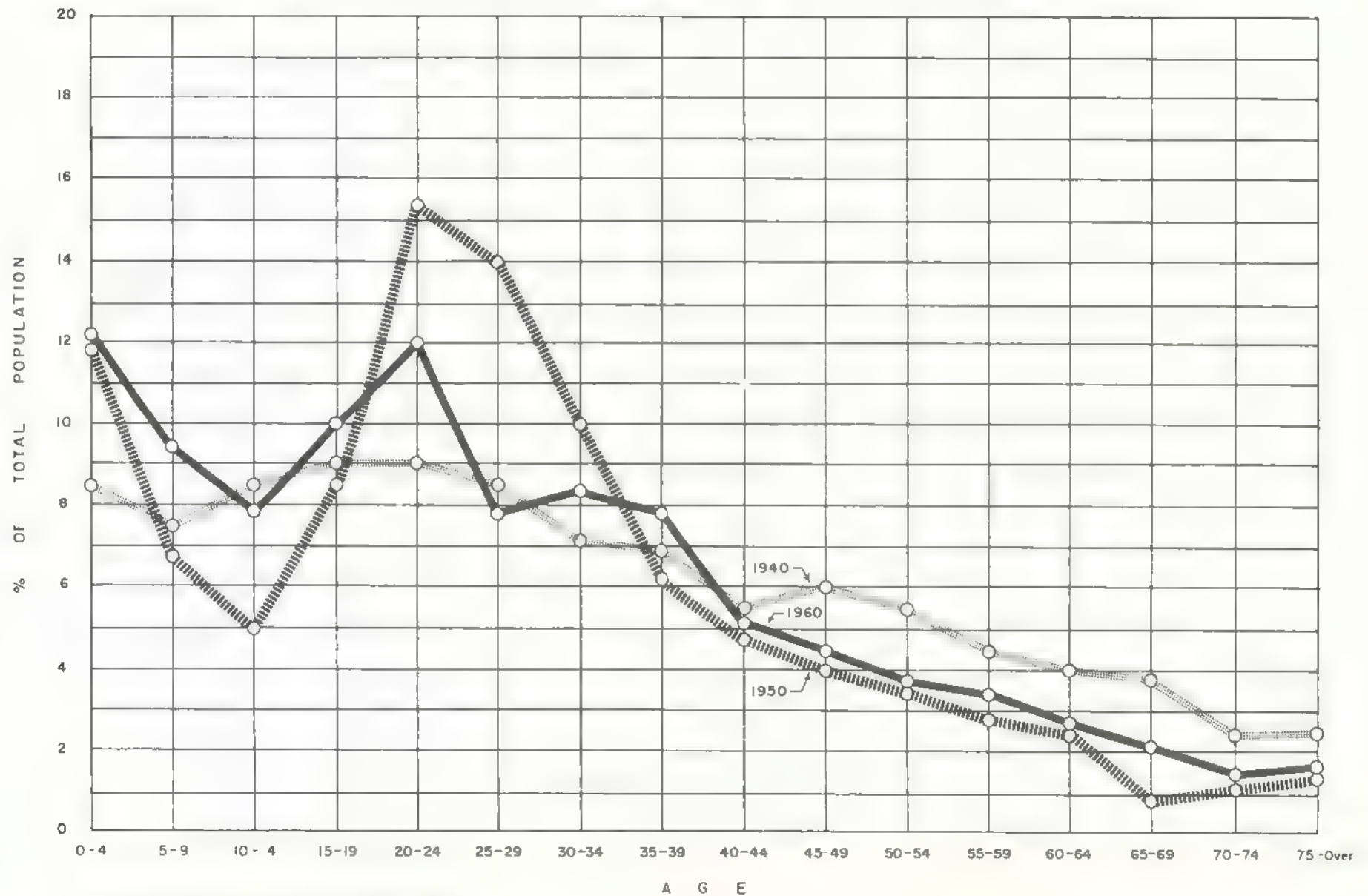




Table 2 shows the same information that is illustrated on Chart 1 but presents the absolute number of people in each age group instead of the percentages. There are several interesting relationships shown on this table that warrant further investigation.

Table 2  
Key West Population 1940, 1950, and 1960

Age Group	1940 Pop.	1950 Pop.	Diff. 1940-50	% Inc. 1940-50	1960 Pop.	Diff. 1950-60	% Inc. 1950-60	Diff. 1940-60
Under 5	1,111	3,147	2,036	183.2%	4,192	1,045	33.2%	3,081
5-9	973	1,786	813	83.5%	3,188	1,402	78.5%	2,251
10-14	1,105	1,315	210	19.0%	2,623	1,308	99.5%	1,518
15-19	1,182	2,254	1,072	90.7%	3,349	1,095	48.6%	2,167
20-24	1,180	4,123	2,943	249.4%	4,163	40	1.0%	2,983
25-29	1,093	3,703	2,610	238.8%	2,708	-995	-26.9%	1,615
30-34	963	2,617	1,654	171.8%	2,843	226	8.6%	1,880
35-39	895	1,690	795	88.8%	2,651	961	56.9%	1,756
40-44	707	1,236	529	74.8%	1,855	619	50.1%	1,148
45-49	805	1,053	248	30.8%	1,446	393	37.3%	641
50-54	707	843	136	19.2%	1,226	383	45.4%	519
55-59	590	746	156	26.4%	1,090	344	46.1%	500
60-64	512	628	116	22.6%	816	188	29.9%	304
64-69	459	514	55	12.0%	725	211	41.1%	266
70-74	341	355	14	4.1%	516	161	45.4%	175
75 plus	304	423	119	39.1%	565	142	33.6%	261
Total	12,927	26,433			33,956			
Median Age	29.2	25.7			24.4			

Chart 1 shows that the 5 through 19 age groups all had a net decrease in their percentage share of the total population between 1940-1950. Table 2 shows that there was an absolute increase in the population of these three age groups. These seemingly contradictory statements can be clarified by the fact that although there was a net increase in these three age brackets (2,095 people), the increase in the 20-34 age brackets (7,207 people) exceeded that in the 5-19 age groups and hence it resulted in a net decrease in their percentage of the total population.

Chart 1 also shows that during the ten year time span of 1950-1960, there was another significant change in the percentage distribution of the total population. The most noticeable changes that occurred were the percentage increases in the 5-19 age brackets inclusive and the percentage decrease in the 20-34 age groups. It is important to note that this is a complete reversal of the 1940-1950 trend. When comparing Chart 1 with the statistics presented in Table 2, we are able to understand the reasons for this reversal in the patterns established from 1940-1950. The table shows that large percentage increases were in existence in the 1950-1960 decade for the 5-19 age groups. The table also shows there were only small percentage increases, and in one case a net percentage decrease, in the 20-34 age brackets.

Table 2 also presents data relating to the median age of the Key West population. This information lends further support to the hypothesis that the re-activation of the Naval Station had an immense impact on the population characteristics of the area. The table shows that between 1940 and 1960, the median age has dropped from 29.2 to 24.4, with the most noticeable change occurring between 1940 and 1950.

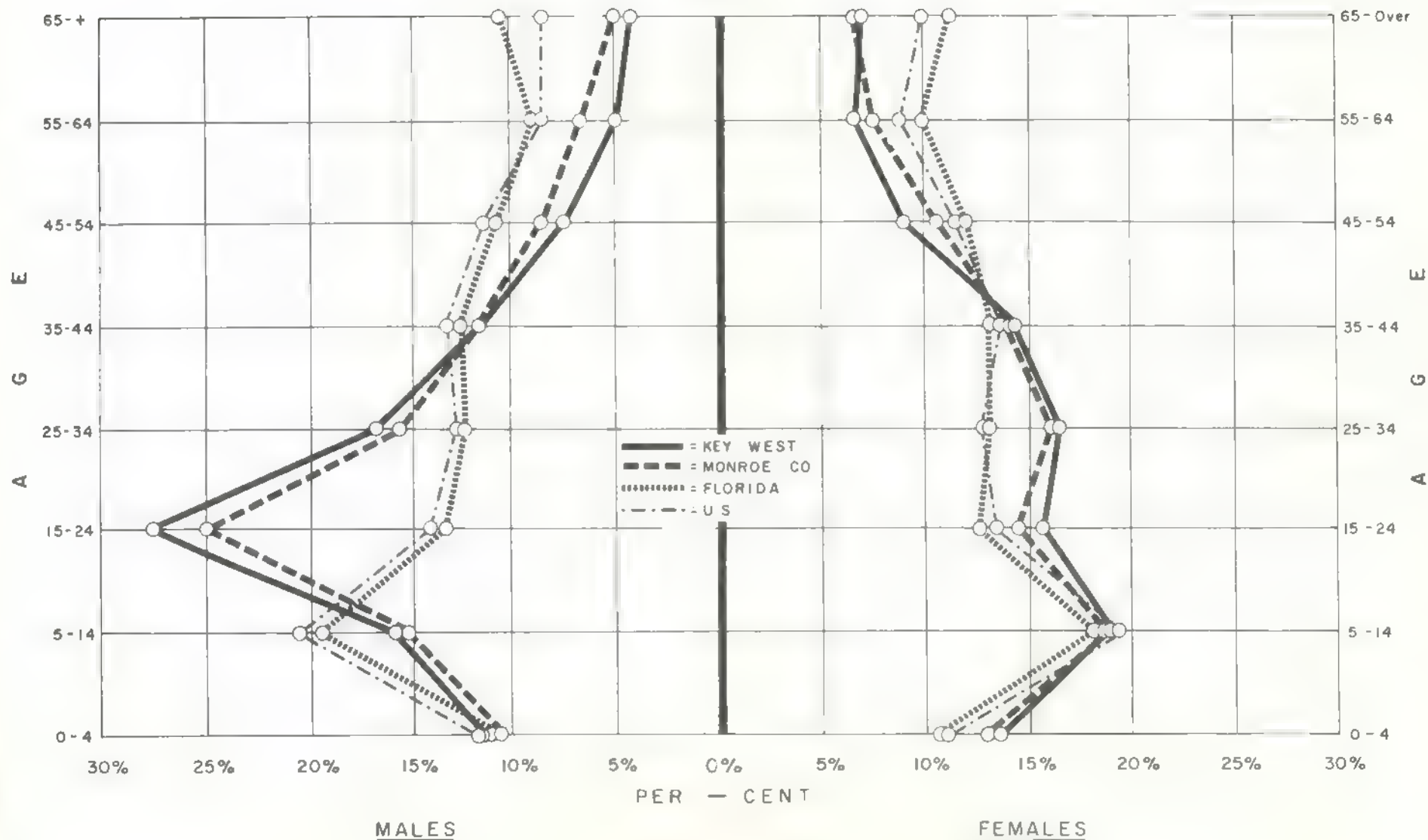
It should be noted that the 1940 median age of Key West was identical to that of the entire United States, but since that time it has dropped below the United States average, indicating that a much younger population is in residence in Key West. These statistics indicate the great importance of identifying and understanding the migration patterns which are occurring in the Key West area. This subject will be dealt with in greater depth in the next section of this report.

Chart 2 compares the percentage age distribution statistics by sex of Key West and Monroe County to the State of Florida and the entire United States of 1960. This shows interesting facts that bear elaboration.

First, it should be noted that there is a sizable disparity between the male and female percentage distribution in the Key West area. The males aged 15-34 are greatly out of proportion to both the Florida and the entire United States percentage of males of the same age group. This fact is particularly significant when it is remembered that there was a percentage decrease in these age groups during the 1950-1960 time period. Had the 1950 male distribution been shown in a similar manner, the disparity would have been even greater.



CHART 2  
AGE STRUCTURE OF KEY WEST POPULATION  
1960





The chart once again shows that Key West is a younger population. All age groups over 45 have a lower percentage in Key West than the entire State of Florida within the United States.

### Summary

The predominantly young population in existence in Key West contains specific relevance to later phases of the planning process. When allocating such facilities as schools, parks, and amounts of different housing types, these factors must be considered. The statistics also supply adequate proof that the City must continue to work in close cooperation with the officials of the Naval Station, since this is no doubt the principal reason why the Key West area possesses such atypical population characteristics.

## CHARACTERISTICS OF THE POPULATION

Existing and changing characteristics of a population within a specific area have vital implications in the preparation of physical plans for a community. Such factors as mobility, household size, income and racial composition are primary inputs into planning for the amount and type of housing that needs to be added, and anticipating the necessary school and recreation facilities.

As a result of the generally stable population which existed between 1900 and 1940 and the vast change in the population structure since this time period, the statistical tables presented in this portion of the report will pertain to the interval between 1940 and 1960.

### Vital Statistics

Rather than merely reproduce the statistics on the absolute number of births and deaths which have occurred in the Key West area over the past several years, these statistics have been translated into age specific birth and death rates applicable to the area's population.

Table 3 below presents information concerning the age specific birth rates of the Key West population and compares them to the overall United States average.

Table 3  
Age Specific Birth Rates per 1,000 Females

	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>35-39</u>	<u>40-44</u>
1960 Monroe Co.	172.0	301.0	161.0	97.0	46.0	5.0
U.S.	89.0	258.1	197.4	112.7	56.2	15.5
1961 Monroe Co.	176.0	318.0	172.0	88.0	45.0	12.0
U.S.	88.0	253.6	197.8	113.3	55.6	15.6
1962 Monroe Co.	182.0	319.0	184.0	95.0	44.0	7.0
U.S.	88.0	254.0	198.0	109.0	53.0	15.0

The table shows that the Monroe County population was used for calculating the birth rates. It was felt that since the only major hospitals in the area are located in Key West, the rates would be more realistic if calculated from the total County population instead of only the City's population. It is a simple calculation to obtain the approximate number of births assignable to Key West women. This is done by multiplying the rates by the population within each respective age group.

The extremely high birth rates of women aged 15-24 in Monroe County is most likely a reflection of the high proportion of women in these age groups married to service men stationed in Key West. As was shown earlier in this report, there is a higher proportion of females aged 15-24 in Key West than in the State of Florida and in the entire United States. Beyond age 25, an opposite trend is seen with a higher birth rate in the entire United States than in Key West.

The death rates are calculated in the same manner with the number of deaths per age group divided by the population of that specific age group and then multiplied by 1,000. Like the birth statistics, the death rates were based upon the entire Monroe County population. In addition to this, separate death rates were calculated for males and for females.

Presented below are the age specific death rates for males in Monroe County for the years 1960 through 1963 and for the State of Florida for 1960. It was felt necessary to present the death rates for four years in Monroe County because the small population of the area could produce atypical results if just one year were presented. An unknown amount of error was introduced into these tabulations because the rates were calculated on the 1960 population and no changes in the population were estimated for the years 1961, 1962, and 1963. For purposes of this section of the report, changes occurring from 1960 to 1963 in the population structure of the area were assumed to be insignificant.

Table 4  
Age Specific Death Rates for Monroe County Males

	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-34</u>	<u>35-44</u>	<u>45-54</u>	<u>55-64</u>	<u>65 plus</u>
1960	8.9	0.0	0.5	0.3	0.2	3.0	2.9	9.9	27.7	73.3
1961	8.2	0.9	0.0	0.3	0.5	0.7	3.8	11.2	24.3	69.6
1962	7.2	0.4	0.0	0.6	1.5	2.3	5.5	9.0	27.2	59.3
1963	7.5	0.9	0.5	0.6	0.7	1.8	3.5	9.4	30.6	60.1
Florida										
1960	8.4	0.6	0.8	1.3	1.8	2.2	4.5	11.2	24.5	57.0

Table 4 produces evidence that the Key West area is almost identical to the State of Florida as far as age specific death rates for males is concerned. No doubt most of the fluctuation in the Monroe County statistics can be attributed to the fact that there is a small population and a change of 2 or 3 deaths in any one age group shows up as a sizable difference in the table.



The identical process was performed to determine the age specific death rates of Monroe County females and the results are presented in Table 5.

Table 5  
Age Specific Death Rates for Monroe County Females

	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-34</u>	<u>35-44</u>	<u>45-54</u>	<u>55-64</u>	<u>65 plus</u>
1960	6.9	1.3	0.0	1.4	1.1	0.5	1.0	4.5	8.4	54.6
1961	6.2	0.0	0.0	0.7	1.7	0.8	3.7	5.9	5.8	55.4
1962	5.4	0.0	0.0	0.7	0.5	2.0	1.6	6.8	11.7	70.6
1963	7.2	0.0	0.5	0.0	1.7	0.8	2.0	9.1	14.9	50.8
Florida										
1960	6.4	0.4	0.3	0.6	0.8	1.3	2.6	5.8	11.3	38.6

The table shows that the Monroe County female death rate is almost comparable to that of the entire State of Florida, with the only exception being the 65 and over age group. The most plausible explanation for this deviation is that some selective factor is at work creating a significant difference in the female population 65 and over in Key West in comparison to the State of Florida.

Along with the birth and death rates, the other factor which causes the population to increase or decrease is the migration occurring in the area. Table 6 presents the migration statistics pertaining to Monroe County and Key West.

As Table 6 shows, migration in the Key West area is a matter of major concern. Of all the people tabulated as residing in Key West in 1960, over 40 per cent of them lived in a different county in the United States in 1955. No doubt the principal cause for this occurrence is the transient nature of the military population.

Table 6  
In-Migration Occurring From 1955-1960

	<u>Monroe County</u>	<u>Key West</u>
Population 5 and over - 1960	42,276	29,764
Lived in Monroe County - 1955	18,669	6,363
Lived in different County - 1955	20,269	12,867
Lived in Florida - 1955	3,854	1,751
Lived elsewhere in U.S. - 1955	16,415	11,116
Lived in foreign country - 1955	1,420	1,192

#### Persons per Household

According to the latest Bureau of the Census survey, there are approximately 3.3 persons per household in Key West and about 3.1 for Monroe County. Table 7 presents additional statistics on this subject by comparing these figures to the entire State of Florida and for all urban areas within the State.

Table 7  
Persons per Household

	<u>Key West</u>	<u>Monroe County</u>	<u>State of Florida</u> <u>Total</u>	<u>Urban</u>
1950	3.3	3.2	3.2	3.1
1960	3.3	3.1	3.1	3.0

As the above table shows, there has been a trend toward smaller households throughout the entire State. This trend is caused by the large number of retired persons migrating to Florida. The Key West statistics show no evidence of this trend, primarily because of the younger population in residence in the area.

#### Racial Composition

Since 1940, the non-white portion of the population has remained relatively stable as is reflected in the statistics presented in Table 8 on the following page.

Table 8  
Non-White Portion of Key West Population

	<u>Total Population</u>	<u>Non-White Population</u>	<u>Per cent Non-White</u>
1940	12,927	2,365	18.3%
1950	26,433	3,020	11.4%
1960	33,956	4,002	11.8%

Once again we see a peculiarity in that between 1940 and 1960 there was an increase of 1,637 persons in the non-white population, while there was a decrease in the non-white percentage of total population. This occurrence is due to the fact that the white sector of the population grew at a much faster pace than the non-white sector.

For present planning purposes it is assumed that the proportion of non-white population will remain at or near its present percentage of the total population. The only significant increase in this sector of the population will be a result of natural causes, or in other words an increase resulting from an excess of births over deaths. There are two major reasons for making such a statement. First, the agricultural sector of the economy, one of the major employers of non-whites, will increase little if any in the foreseeable future. Secondly, the immigration laws will continue to have a severely limiting effect on the amount of migrants arriving in Key West from other countries.

#### Sex Composition

It could be hypothesized from statistics that the sex composition of the Key West area is quite atypical. Table 9 below presents the statistics pertaining to this discussion.

Table 9  
Sex Composition of the Key West Population

	<u>Total Population</u>	<u>Males</u>	<u>%</u>	<u>Females</u>	<u>%</u>
1940	12,927	6,436	49.8%	6,491	50.2%
1950	26,433	15,560	58.9%	10,873	41.1%
1960	33,956	18,872	55.6%	15,084	44.4%

The table shows that in 1940, prior to the re-establishment of the Naval Station, there existed a normal sex distribution. In the two most recent census reports the statistics vividly show what effect the military population has had on the sex composition.

### Levels of Educational Attainment

Tables 10 and 11 present the statistics pertaining to the levels of educational attainment of the Key West population 25 years old and over. The tables show that in 1940 more than 50 per cent of the Key West population had less than an eighth grade education. It is again seen that between 1940 and 1950, there was a significant increase in the levels of educational attainment by the Key West residents. The male median education level was significantly higher in Key West than it was for either the State of Florida or the United States, while the female average was identical to the median for Florida and the United States. During the most recent decade the medians for both males and females have again risen. The 10.8 medians for both males and females indicate that almost one half of the population over 25 have completed eleven years of education.

Table 10  
Levels of Educational Attainment by Population 25 Years Old and Over

	1940			1950			1960		
	<u>Number</u>	<u>%</u>	<u>Cum. %</u>	<u>Number</u>	<u>%</u>	<u>Cum. %</u>	<u>Number</u>	<u>%</u>	<u>Cum. %</u>
No School Completed	326	4.1%		150	1.1%		278	1.7%	
Elementary 1-7	3,977	49.3%	53.4%	3,470	26.6%	27.7%	3,868	23.7%	25.4%
8	1,084	13.4%	66.8%	1,720	13.2%	40.9%	1,942	11.9%	37.3%
High School 1-3	1,245	15.4%	82.8%	2,685	20.6%	61.5%	3,436	21.0%	58.3%
4	905	11.2%	93.4%	3,395	26.0%	87.5%	4,487	27.5%	85.8%
College 1-3	270	3.4%	96.8%	790	6.0%	93.5%	1,141	7.0%	92.8%
4 or more	<u>259</u>	3.2%	100.0%	<u>855</u>	6.5%	100.0%	<u>1,184</u>	7.2%	100.0%
Total	8,066			13,065			16,336		

Changes have been occurring in the educational levels of the population during the 1940 to 1960 time span. It is particularly interesting to note the changes that occurred between 1950 and 1960. In the first three groupings there were small percentage decreases, with the following three groupings all showing percentage increases. There is no reason to believe that this trend of gradual increases in levels of educational attainment will not continue to occur in the future.

Table 11  
Median School Years Completed by Persons 25 and Older

	1940		1950		1960	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Key West	7.6	7.9	10.5	10.0	10.8	10.8
Florida	8.6	9.1	9.2	10.0	10.6	11.1
United States	8.6	8.7	9.2	9.9	10.4	10.9

#### Present Educational Enrollment

Along with the previous statistics showing the progression of educational attainment level among the Key West residents, it is also necessary to review the present enrollment patterns in the City.

Table 12  
Per Cent of Specific Age Groups Enrolled in School, 1960

	Per Cent Enrolled		
	<u>Key West</u>	<u>Total</u>	<u>Urban</u>
5-6 years old	53.7%	53.1%	55.0%
7-13	91.1%	97.5%	97.6%
14-15	82.9%	94.4%	94.8%
16-17	60.2%	79.4%	80.9%
18-19	22.0%	38.5%	42.3%
20-21	8.2%	15.9%	18.9%
22-24	4.3%	7.8%	9.0%
25-34	2.1%	4.3%	4.5%

Table 12 shows that the enrollment percentages for the first two age groups (ages 5 through 13) in Key West are roughly analogous to that for the entire State and for the State urban. But, after this, all the older age groups show a significantly smaller percentage enrollment when



compared to the entire State and the State urban. These statistics are extremely interesting in relation to the figures presented in Tables 10 and 11. These tables showed that the population 25 years old and over in Key West had a median educational attainment level comparable to the entire State, yet Table 12 shows that the present enrollment percentage is far below the State average.

Two immediate implications can be drawn from these statistics:

1. The significantly lower rates shown in Table 12 can possibly be attributed to the fact that there are a higher than normal percentage of males ages 17-20 in the Key West population than in the entire State in 1960. This statement is supported by the statistics presented in Table 13.

Table 13  
Percentage of Males Ages 15-20 in Key West Population, 1960

	Key West		Florida	
	<u>Number</u>	<u>Per Cent</u>	<u>Number</u>	<u>Per Cent</u>
Total Males	18,872		2,436,783	
Males Age 15	195	1.0%	36,555	1.5%
16	192	1.0%	36,266	1.5%
17	314	1.7%	34,980	1.4%
18	703	3.7%	31,686	1.3%
19	856	4.5%	30,087	1.2%
20	900	4.8%	30,207	1.2%

The higher percentage of males aged 17-20 in the Key West population can be attributed to the military establishment, and hence partially accounts for the lower percentage of school enrollments. If possible, it would be interesting to subtract the number of males associated with the Armed Forces and then re-calculate an adjusted percentage for Table 12. It is obvious that the percentages would rise, but it is doubtful that they would come up to the State and State urban averages. This statement is based on the fact that upon examination of Table 12, all age groups have significantly lower percentages except the 5-6 and 7-13. Of all these age groups, only those of 18 years old and over would contain military personnel.

2. The almost comparable median age of educational attainment for the population age 25 years old and older in Key West, Florida, and the United States can probably also be attributed mainly to the Armed Forces in residence in the Key West area. It can be assumed that the majority of persons who are over age 25 and serving in the Armed Forces are those making a career of the service. When such is the case, it can be further assumed that they would have an above average level of educational attainment. These hypotheses are supported by the statistics presented in Table 11 which showed that the tremendous increase in the median age of educational attainment is analogous to the time period when the Naval Base was re-activated to a role of primary importance. It is further supported by the fact that during the next decade (1950-1960) when the Naval Base was primarily in a position of status quo, the median level of educational attainment increased only slightly.

### Income and Occupation

Although more detailed information will be prepared later in the economic study concerning income and occupation characteristics of sub-areas of Key West, it was considered important to review the overall statistics for the entire Key West area.

Table 14 presents the first review of the income characteristics of the population by showing the percentage breakdown of family income in the State and the Key West area. This table shows that Key West family income is more highly clustered in the middle range (between \$3,000 and \$6,999). In the next higher income brackets, i.e., between \$7,000 and \$9,999, the percentages are fairly comparable between the entire State and Key West. At both extremes of the scale, Key West possesses lower percentages in comparison to the entire State.

This grouping of incomes in the middle brackets is unusual because of the hypothesized lower educational levels of the permanent Key West resident population. The clustering of incomes is primarily a result of the fact that more than one-half of all males employed in the Key West area are associated with governmental agencies.\* The table also shows that the median income for the State and Key West are practically identical.

\*According to 1960 Census, Key West had a male labor force of 12,200 of which 6,939 or approximately 57% were in the Armed Forces and the remaining 5,261 were in the civilian labor force.

Table 14  
Family Income by Per Cent Distribution

	<u>Key West</u>	<u>Florida</u>
Under \$1,000	4.8%	6.3%
\$1,000 - \$1,999	7.5%	9.9%
\$2,000 - \$2,999	10.9%	12.2%
\$3,000 - \$3,999	15.0%	12.9%
\$4,000 - \$4,999	15.9%	12.0%
\$5,000 - \$5,999	13.0%	11.4%
\$6,000 - \$6,999	9.6%	8.9%
\$7,000 - \$7,999	6.2%	6.8%
\$8,000 - \$8,999	5.2%	5.0%
\$9,000 - \$9,999	3.3%	3.4%
\$10,000 - \$14,999	6.5%	7.3%
\$15,000 - \$24,999	1.8%	2.6%
\$25,000 and over	0.2%	1.3%
Median	\$4,736	\$4,722

The hypotheses made concerning the educational attainment of the Key West population are further supported by Table 15 which compares male incomes in Key West to those for the entire State of Florida.

Table 15  
Male Income by Per Cent Distribution, 1960

	<u>Key West</u>	<u>Florida</u>
\$1 - \$499	6.3%	6.3%
\$500 - \$999	7.4%	8.1%
\$1,000 - \$1,499	11.6%	8.4%
\$1,500 - \$1,999	8.8%	6.9%
\$2,000 - \$2,499	7.6%	8.5%
\$2,500 - \$2,999	7.4%	7.0%
\$3,000 - \$3,499	8.0%	7.8%
\$3,500 - \$3,999	6.9%	5.8%
\$4,000 - \$4,499	7.7%	6.4%
\$4,500 - \$4,999	4.8%	4.8%
\$5,000 - \$5,999	9.6%	9.8%
\$6,000 - \$6,999	5.2%	6.3%
\$7,000 - \$9,999	5.7%	7.9%
\$10,000 and over	2.9%	6.0%
Median	\$3,058	\$3,306

This table shows that with only a few exceptions, the income for males in Key West and the entire State is roughly comparable. The only significant exception to this statement is that the \$1,000 - \$2,000 brackets have higher percentages in Key West, and the State possesses higher percentages in the \$7,000 and over categories. As a result of the higher percentage of Key West male incomes in the \$1,000 - \$2,000 income brackets, the median income in the Key West area is approximately \$250 below the median for the entire State.

Table 16  
Female Income by Per Cent Distribution, 1960

	<u>Key West</u>	<u>Florida</u>
\$1 - \$499	24.8%	22.8%
\$500 - \$999	22.6%	23.0%
\$1,000 - \$1,499	12.5%	12.8%
\$1,500 - \$1,999	8.4%	8.9%
\$2,000 - \$2,499	6.5%	8.1%
\$2,500 - \$2,999	6.2%	5.6%
\$3,000 - \$3,499	4.0%	5.3%
\$3,500 - \$3,999	3.6%	3.6%
\$4,000 - \$4,499	3.8%	3.1%
\$4,500 - \$4,999	2.4%	1.6%
\$5,000 - \$5,999	2.9%	2.6%
\$6,000 - \$6,999	0.9%	1.0%
\$7,000 - \$9,999	1.1%	0.9%
\$10,000 and over	0.3%	0.7%
Median	\$1,105	\$1,163

The only deviation in female income between Key West and the entire State is that the City has a slightly higher percentage in the \$4,000 - \$6,000 income brackets. The most probable explanation for this phenomenon is the fact that with the large number of military personnel in the area, a significant proportion of the wives hold full time jobs.

When this hypothesis was investigated further, several interesting relationships were discovered. First, the participation rates for female employment were as shown in Table 17 on the following page.



Table 17  
Female Employment Participation Rates, 1960

	<u>Key West</u>	<u>Monroe County</u>	<u>Florida</u>
Number females 14 and over	10,388	14,775	1,829,192
Number females employed	2,989	4,616	635,639
Percentage employed	28.8%	31.2%	34.7%

Table 17 shows that the Key West participation rate is below the State average by almost 6.0%. This indeed is an unusual fact since Key West is an "impacted" area. The most probable explanation for this occurrence is that due to the unusual geographic conditions existing in the area, the opportunity for females to obtain work is restricted.

Table 18  
Age Distribution of the Female Labor Force, 1960

	<u>Key West</u>	<u>Per Cent</u>	<u>Florida</u>	<u>Per Cent</u>
Total Labor Force	2,989		635,639	
14-17 years old	114	3.8%	18,231	2.8%
18-24	502	16.8%	91,404	14.4%
25-34	652	21.8%	132,658	20.9%
35-44	848	28.4%	160,641	25.3%
45-64	789	26.4%	211,222	33.2%
65 Plus	84	2.8%	21,483	3.4%

Table 18 distributes the 2,989 Key West females employed in 1960 by age groups and then compares these percentages to that obtained for the entire State. The most noticeable trend established by this table is that the Key West area has higher participation rates in the younger age brackets (ages 14-44) and correspondingly lower participation rates in the over 44 age groups.

The last income comparison presented is for the non-white population of the Key West area.

Table 19  
Non-White Family Income by Per Cent Distribution, 1960

	<u>Key West Non-White</u>	<u>State Non-White</u>	<u>State Urban Non-White</u>
Under \$1,000	12.3%	12.5%	11.1%
\$1,000 - \$1,999	10.8%	19.6%	17.5%
\$2,000 - \$2,999	18.3%	22.3%	21.8%
\$3,000 - \$3,999	21.2%	18.7%	19.8%
\$4,000 - \$4,999	18.5%	11.6%	12.6%
\$5,000 - \$5,999	7.9%	6.3%	7.1%
\$6,000 - \$6,999	2.0%	3.5%	3.9%
\$7,000 - \$7,999	3.0%	1.9%	2.1%
\$8,000 - \$8,999	1.5%	1.2%	1.4%
\$9,000 - \$9,999	2.0%	0.8%	0.9%
\$10,000 and over	2.5%	1.4%	1.6%
Median	\$3,400	\$2,798	\$2,980

The above table shows that the majority of State non-white income is clustered in the \$1,000-\$3,000 groupings while the Key West non-white income is significantly higher centered in the \$3,000 - \$5,000 income brackets. There is also a general tendency for the Key West percentages to exceed the overall state percentage figures in all income brackets over \$6,000, although this is not nearly as noticeable as it was in the lower income range, i.e., \$3,000 - \$5,999.

In conjunction with these income statistics, it is also necessary to examine the occupational characteristics of the Key West area. A review of this material is presented in Table 20 which shows absolute number and amount of the change which has occurred in the occupational structure in the Key West area between 1950-1960 for both males and females. As the table shows, with the exception of the concentration of military personnel, the remaining employment sectors are highly diversified.

Table 20  
Occupations of Key West Residents by Sex, 1960

	Males			Females		
	<u>1950</u>	<u>1960</u>	<u>Increase 1950-1960</u>	<u>1950</u>	<u>1960</u>	<u>Increase 1950-1960</u>
Professional, technical & kindred workers	289	388	99	222	387	165
Farm and farm managers	1	4	3	2		-2
Managers, officials and proprietors excluding farm	556	570	14	119	215	96
Clerical and kindred workers	260	365	105	394	759	365
Sales workers	218	354	116	164	281	117
Craftsmen, foremen & kindred	949	1,056	107	14	13	-1
Operatives and kindred	538	649	111	116	169	53
Private household workers	9	5	-4	154	233	79
Service workers excluding private household	433	491	58	262	476	214
Farm laborers, unpaid family workers	3	12	9	1		-1
Laborers, except farm and mine	632	647	15	8		-8
Occupation not reported	72	503	431	17	275	258
Unemployed	161	237	76	40	169	129
Total Civilian work force	4,118	5,261	1,143	1,513	2,977	1,464
Armed Forces	No report	6,939				

It has been reported in a separate study that the Key West economy is divided into three main sectors. They are:

1. Fishing
2. Tourism
3. Military\*

Table 20 supplies evidence to verify this statement. The fishing industry is represented by the category "Laborers, except farm and mine". The breakdown of the 647 males shown as employed in this category is as follows: 110 employed in construction, 25 in manufacturing, and 512 in other industries. For present purposes, it is assumed that most of these 512 males are engaged in the fishing industry. If such is the case, it means that approximately 10 per cent of the private sector of the economy is directly engaged in commercial fishing. It can be further assumed that the 10 per cent figure is an understatement of the importance of the fishing industry because of the additional persons employed in the allied industries associated with commercial fishing such as canning, packaging, and distribution of the products.

In addition to the resident population associated with this occupation, the Key West port serves as a harbor for commercial boats which come from as far away as Texas and North Carolina to fish off the Keys. This is another factor which increases the importance of the allied industries, since these boats will take on food, fuel, and often require maintenance while in port.

Table 21 which shows the number of tourists arriving in Florida by automobile and stating their destination was Key West attests to the importance of tourism in the local economy.

Table 21  
Yearly Number of Tourists Visiting Key West

1960	177,407
1961	190,109
1962	215,027
1963	216,159
1964	219,053
1965	210,313

Source: Tourist Studies, Florida Development Commission, Tallahassee, Florida.

\*Wainright Ramsey, Key West, Florida, A Descriptive Survey.

The latest statistics available indicate that the average length of stay for a tourist is approximately 14 days with an expenditure of slightly over \$16.00 per day per person. The two occupational listings on Table 20 primarily oriented toward the tourist trade would be "Sales workers" which employ 334 males and 281 females, and "Service workers except private household" which employ 491 males and 476 females. Taken collectively, they represent approximately 20% of the civilian labor force. The significance of these sectors of the Key West economy is further verified when comparing them to the percentages of the entire State. In Florida, a state oriented toward tourist trade, there was only 14% of the total labor force engaged in these two sectors of the economy.

### Summary

The statistics presented in this section of the report raise important questions, and ones that must be answered before meaningful and realistic planning proposals can be presented. Such questions would include:

1. What are the total population figures for military personnel and dependents in Key West and Monroe County?
2. What is the age distribution of the above population?
3. What is the volume of turnover of these people in the Key West area?
4. What are the estimates for the number of military personnel that will be assigned to the Naval Station in the future?
5. Although the median income in Key West is comparable to the entire State, an investigation should be undertaken to ascertain whether the cost of living is also comparable.

Once the answers to such questions as these have been obtained, it would be possible to re-study the statistics presented in this section and re-evaluate the area as to the age and sex distribution of the civilian resident population. It is conceivable that a significantly different population picture would be presented if such were undertaken.



## REVIEW OF EXISTING POPULATION PROJECTIONS

This section of the report reviews the various population projections that have already been made for the entire State of Florida and those dealing specifically with Key West and Monroe County. It is important to point out that this is only a review of existing projections and does not include projections prepared by this firm. The utility of reviewing these projections is intended to serve as an aid so that when compared with the results of the survey questionnaire, it will be possible to make an accurate appraisal of the growth potential of the Key West area.

### State Population Projections

Two separate estimates of the anticipated State population growth are presented below in Table 22.

Table 22 State of Florida Projected Population	
1960	4,952,000 (actual)
1970	7,105,000*
1976	8,387,000**
1980	9,636,000*
1990	-
2000	14,629,000

\* Prepared by the American Telephone and Telegraph Company, September, 1964.

\*\* Prepared by the Outdoor Recreation Resources Review Commission, January, 1962.

These figures have little meaning by themselves since they give no indication of the Key West projected population, but presented below are statistics indicating what percentage the Key West population has been of the total Florida population since 1900.

Table 23  
Percentage of Florida Population Residing in Key West

1900	3.2%
1910	2.7%
1920	1.9%
1930	0.9%
1940	0.7%
1950	1.0%
1960	0.7%

If we assume that the Key West population will remain at approximately 0.8 per cent of the total State, as it has for the past 30 years, we obtain the following estimates:

Table 24  
Key West Projected Population Derived from State Projected Population

1970	56,840
1976	67,096
1980	77,088
1990	-
2000	117,000

The reliability of these estimates depends on two assumptions. First, these projections assume that the Armed Forces stationed in Key West will continue to expand along with the civilian population. This assumption is an unknown situation at present, but it is highly doubtful if it will increase at such a fast pace, if indeed it will increase at all.

The second assumption inherent in these projections is that there are unlimited land resources available in the Key West area. This, of course, is not true.

### Monroe County and Key West Population Projection

Because of these no doubt faulty assumptions, it will be more useful to look at the projections that have been made specifically for Key West and Monroe County.

The first two projections reviewed were made by the Florida Division of Mental Health and the Division of Community Hospitals and Medical Facilities. The two projections were made in conjunction with respective plans for additional medical facilities that would be needed throughout the State in 1970. The first organization projected a total 1970 population of 74,200 in Monroe County, while the second group projected a civilian population of 58,500 in Monroe County in 1970. Although not specifically stated in their report, if the Division of Mental Health assumed that the number of persons associated with the Armed Forces would remain constant, their civilian population projection would be approximately 65,350.

Two separate projections have been made for the Key West area by consulting engineering firms. One firm was under contract to the City of Key West to study the condition of existing sanitary sewers and the need for new sewer facilities in the area. The second firm was under contract to the U.S. Department of the Interior to study the feasibility of placing a nuclear power plant in the Florida Keys. The population projections made by these firms are presented in Table 25.

Table 25  
Projected Population for the City of Key West

1970	42,000*	32,000**
1980	50,000	40,000
1990	-	46,250
2000	-	53,000
2010	-	59,400

\* Prepared by Smith and Gillespie, Engineers., Inc., July, 1964.

\*\* Prepared by Burns and Roe, Inc., March, 1964.

As can be seen, there is considerable variability in these estimates even though they both represented projections of civilian population, and only for the Key West area.

The final two projections reviewed were presented by two groups studying different elements of the Key West school system. The first group, studying the feasibility of locating a junior college in Key West, presented the following projections in November, 1962:

	<u>Key West</u>	<u>Other</u>	<u>Total County</u>
1965	37,000	20,850	57,850
1970	39,300	30,700	70,000

The second projection was made by a group which studied the existing school plant facilities and then made recommendations as to what additions would be necessary in the near future. In their report, they projected an enrollment of 10,346 in grades 1 - 12 in the 1970-1971 school year for the Monroe County school system. According to the 1960 Census, there were 7,386 pupils enrolled in Monroe County schools, which was approximately 15.4 per cent of the total Monroe County population. If the same proportional relationship is assumed, it would mean that they anticipate a 1970 population of some 67,180 in the entire county.

### Summary

The wide variability in the estimates presented in this section of the report produce ample evidence that a thorough study must be made before a truly accurate projection of future growth can be made. The many atypical conditions in existence in the Key West area such as young median age, high migration rates, unusual economic base activities and geographic conditions, add to the difficulty of projecting the new growth.

## ANALYSIS OF THE 1966 HOUSEHOLD SURVEY

### INTRODUCTION AND SUMMARY OF FINDINGS

An important distinction to bear in mind is the unique division of the Key West population into three segments. A large military population in group quarters comprises the first segment. The other two segments, one military and one civilian, consist of population in households.

The household survey did not sample the first segment, nor did the sampling coverage include the military household population quartered in Area 13. This lack of complete coverage was recognized and rectified by means of military personnel estimates. All data presented in this report regarding population size and distribution reflect both the population covered in the sample and the known quantity that was not.

To the fullest extent possible each section identifies the segments involved in the topic under discussion. An attempt was also made whenever possible to subdivide each analysis topic into two parts:

- a. changes that have occurred since 1960 within the community-at-large; and,
- b. variations noted between the several sub-areas of the community at the time the survey was conducted.

### MAJOR FINDINGS

#### Population Growth and Age Characteristics

1. The Key West urban area gained 7,742 persons between April, 1960 and the fall of 1966. Including all three segments current population has risen to 43,870, an amount 21.4% greater than 1960.
2. The City of Key West has experienced a 17.4% increase. The City captured the lion's share of growth in personnel in group quarters, and of non-military households. Its slower pace reflects the greater proportion of in-coming military households who settled on Stock Island. However, the City's civilian population grew more rapidly than the urban area as a whole.



3. The civilian population experienced its most rapid growth rate in the 21-34 year old age group, but in-migration had little to do with this gain. Aging of the large number of 15-20 year olds in 1960, was largely responsible. Gains from civilian migration were most noticeable in the 35-49 year olds and the 10-20 year old age groups.
4. The number and age composition of civilian migrants indicates a civilian population approaching 36,000 by the mid-1980's. This figure represents a net gain of 11,000, and an addition of 3,200-3,300 civilian households. In the absence of changes in the size of the military establishment, total population of the urban area will approach 55,000 by 1987.
5. The age composition of the total projected population will undergo no drastic alteration but will resemble more closely that of the civilian population today.

#### Other Social Characteristics

1. Due largely to changes within the military establishment, the per cent of non-whites increased over that of 1960.
2. The per cent of Negroes in the population did not undergo change in proportion to that of all non-whites.
3. Changes in educational levels are not easily verified, although the per cent of those in the labor force with more than a high school education has jumped.
4. The number of youngsters 15-20 years old without a high school diploma and no longer attending school is almost certainly over 300. The survey indicated 323, and this amount represents a per cent of all 15-20 year olds slightly below the national average.
5. A smaller per cent of the labor force is female than was true in 1960, and participation rates by females in the labor force have dropped off slightly. Gains in male participation rates more than offset their decline.
6. Gains in professional occupations out-stripped those registered by all other occupational categories: relatively slow growth rates were experienced in occupations with strong seasonal and part-time labor demands.

#### Housing, Household Income, and Mobility

1. The rapid growth of trailer housing units has depressed the typical value of owner-occupied housing to a pre-1960 level.
2. Gains registered by trailer units have drastically altered the owner-renter ratio of 1960. Trailer units underlie the shift to home ownership, and have raised vacancy rates in other types of rental units.

3. An exceptional increase in the typical rental charge has occurred since 1960, and is probably a response (motivated by higher vacancy rates) made to cover fixed operating and maintenance costs.
4. Partly as a result of the exceptional rise in rental charged, the value of ownership housing has become a more accurate indicator of differences in household income between the sub-areas of the community.
5. A household income gain of 16.4% accompanied the rapid expansion of jobs in the professional occupations.
6. Although more than 11% of the area's households intend to move during 1967, a larger proportion were occupying the same house they were in five years ago than was true in 1960.
7. Since the majority of households move during their early years of residency, the less dynamic growth prospects augur a reduction in the annual turnover of housing units.
8. Military households intend to move less during 1967 than do civilians.

#### Travel Pattern and Automobile Ownership

1. The number of automobiles is increasing at twice the rate of population gain or of households.
2. The housing density of many older sections of the community can not be maintained in the face of rising automobile ownership rates.
3. At present rates of increase, by 1987, almost seven additional automobiles will be present for every ten already in the community.
4. The major obstacle to solving problems of traffic - at least work trip traffic - is currently and will increasingly be civilian in nature.
5. The downtown area's parking problem is worsened by virtue of the fact that workers residing in the area exhibit the least tendency or ability to work there.
6. Apparently, it is more practical for higher income households to work in or near their area of residence than is true of lower income households.

## FINAL REMARKS

This report is actually only a part of the total survey analysis to be produced. Data on households living under varying conditions of structural blight will be reported in the Neighborhood Analysis. Location of work - area of residence data will be analyzed in making proposals for thoroughfare improvements.

Unless otherwise noted, all 1960 data is based on the Federal Census of that year, and all 1966 data is taken from the household survey.

## ESTIMATING PROCEDURE: FACTORING THE SAMPLE RESPONSE

A total of 2,359 interviews was obtained from the 2,733 housing units originally selected for interviewing. Factors have been computed to expand the sample response to the level of the population-at-large.

The following formula was utilized in the factoring computations to determine correct ratios between households interviewed and households in the entire population.

$$\text{Factor} = \frac{A - (C \times \frac{A}{B})}{B - (C + D)}$$

where

- A = Total number of housing units based on field checks of mosquito control data and use of aerial photographs.
- B = Total number of sample housing units included in the household interview schedule.
- C = Sum of the sample housing units found to be vacant, demolished, or used for non-residential purposes.
- D = Sum of the interviews missed because interviewer was either refused or else unable to contact any member of the household during the call-back routine.

For the entire urban planning area, the formula yielded a factor of 4.36 with

A =	10,932
B =	2,733
C =	163
D =	211

Table 26 represents factors and their reciprocals for those planning analysis areas containing a resident household population.\*

\*Because population in group quarters as in PAA-13, is excluded from such Census figures as household size, etc., and because a reliable estimate of the present size and age composition of the population was obtainable through Naval records, the population in PAA-13 was not sampled.

Table 26

Planning Analysis Area	Factor	Households Interviewed As % of all Households
		( <u>1</u> ) Factor
1 - 17 (total)	4.36	22.9
1	4.47	22.4
2	6.30	15.9
3	4.00	25.0
4	4.1	24.4
5	4.2	23.8
6	4.0	25.0
7	4.6	21.7
8	4.5	22.2
9	4.3	23.3
10	4.2	23.8
14	4.0	25.0
15	4.3	23.3
16	4.8	20.8
17	5.3	18.9



## SIZE, DISTRIBUTION, AND AGE CHARACTERISTICS OF THE CURRENT POPULATION

The survey data indicates almost 44,000 persons are residents of the Key West urban area. Table 27 presents the distribution of population within each of the planning analysis areas.

Table 27  
Population by Planning Analysis Area: 1966

<u>Planning Analysis Area</u>	<u>October, 1966, Population (total)</u>	<u>Per cent of Key West Urban Area Population</u>
1	3,429	7.82%
2	383	0.88%
3	1,163	2.65%
4	3,956	9.02%
5	2,649	6.04%
6	2,975	6.78%
7	3,124	7.12%
8	3,268	7.45%
9	4,196	9.56%
10	1,159	2.64%
13	7,890*	17.98%
14	1,084	2.47%
15	5,267	12.01%
16	426	0.97%
17	2,901	6.61%
All Areas	43,870	100.00%

\*Based upon Navy records, there were 5,720 persons in group quarters, i.e., in barracks on on-board ship, and 2,170 persons in households.

## GROWTH WITHIN THE CITY OF KEY WEST

The net increase in population during the past five and one-half years can be largely associated with development inside the City. For the urban area as a whole, about 50 per cent of the increase was a reflection of military buildup since 1960. As is evident in Table 28, the role played by increases in military personnel was the predominant growth factor within the unincorporated portion of the urban areas.

Table 28  
Population Growth, Key West Urban Area

	<u>Key West Urban Area</u>	<u>City Portion</u>	<u>County Portion</u>
October, 1966 population	43,870	39,868	4,002
April, 1960	36,128	33,965	2,172
Increase 1960-1966	7,742	5,912	1,830
Military	3,849	2,209	1,640
In group quarters	1,801	1,801	-
In households	2,048	408	1,640
Attributable to civilian households	3,893	3,703	190

The distinction made between population growth attributable to military and non-military households has been checked against the record of residential location of military personnel maintained by the U.S. Navy. These records indicated 447 military households resided in the unincorporated part of the urban area, whereas the sample response yielded a total of 450 such households.

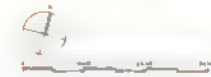
Since a number of planning considerations revolve around the age composition of a given population, a comparison of age groupings in the 1960 and 1966 populations has been analyzed in some detail. Specifically, the analysis was carried out to determine:

1. the extent to which the age structure of the total population is influenced by the presence of military personnel and their dependents; and,
2. the type and degree of change that has occurred in the age structure of the non-military population since 1960.

The importance of these determinations will be evident in their application to the population forecast developed on the following pages.

# POPULATION DISTRIBUTION MAP

KEY WEST URBAN AREA



• EQUALS 50 PERSONS



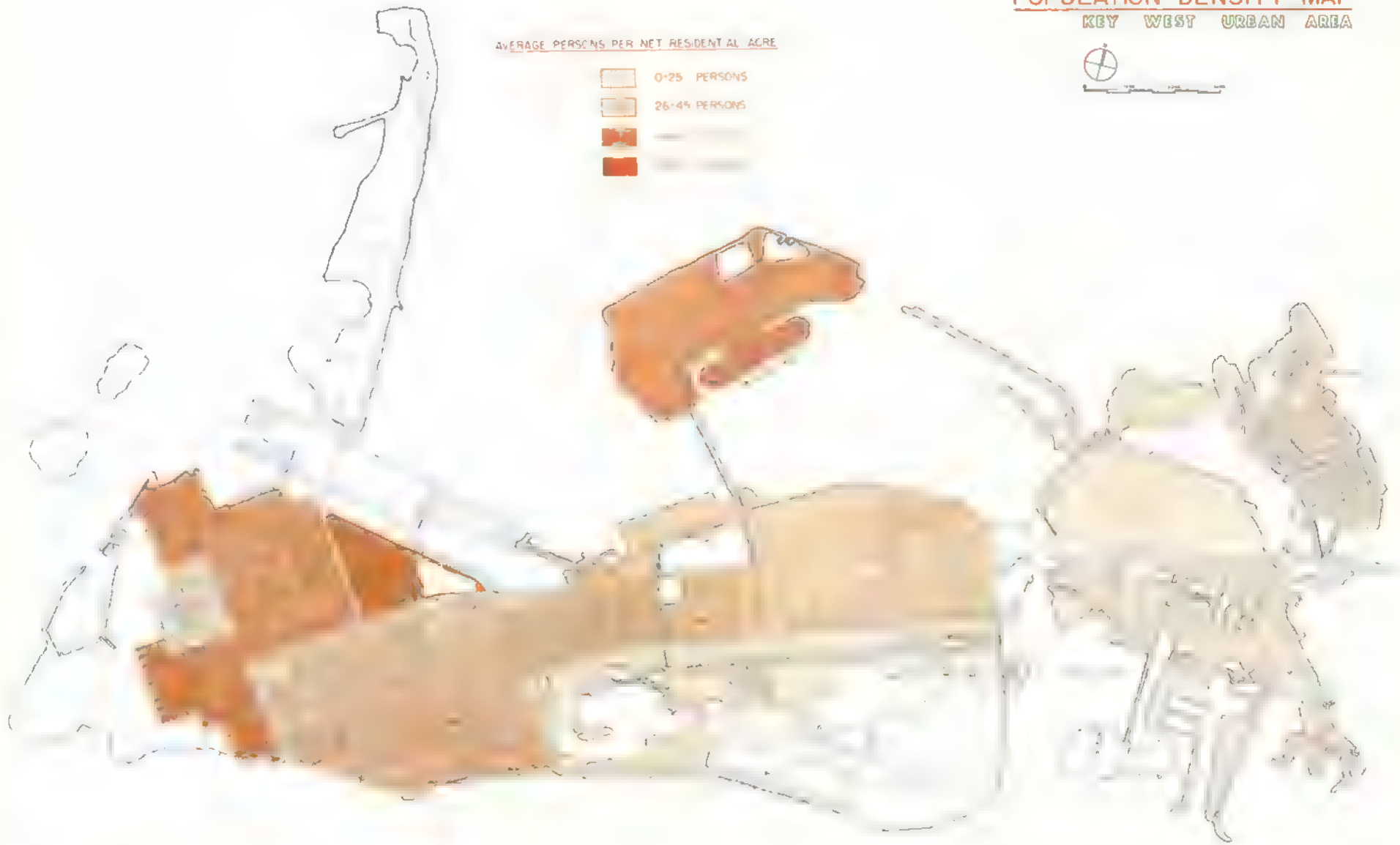


# POPULATION DENSITY MAP

KEY WEST URBAN AREA



AVERAGE PERSONS PER NET RESIDENTIAL ACRE







## INFLUENCE OF MILITARY PERSONNEL AND THEIR DEPENDENTS

During the past five and one-half years, it is estimated that the gap between average ages of the total population and of the population in civilian households registered a 25 per cent increase. This increase is to be associated with the absorption of about 3,850 additional military personnel and their dependents. It indicates that the addition of every thousand persons in military households or group quarters prompts an increase of 7 per cent in the average age differential.

The increase does not stem from the process of aging operating on the 1960 civilian population. The figures in Table 29 serve to demonstrate this point. It can also be demonstrated that the slight change in average age of the 1960 and 1966 civilian population has no significance.\*

Table 29  
Average Age of the Key West Urban Area Population

	<u>1960</u>	<u>1966</u>
Total Population	27.7	26.7
Excluding single military personnel in group quarters	28.1	27.1
Excluding all military personnel and their dependents	32.4	32.6

## CHANGES IN THE AGE STRUCTURE OF THE CIVILIAN HOUSEHOLD POPULATION

The stream of civilian newcomers during the five and one-half year period did not include either a proportion of the very young or the very old that was substantially different from those in the 1960 population. This finding is based on analysis of the figures contained in Table 30. These figures represent the average number of persons per household within each age group in 1960 and 1966. Also presented are the percentages expressing each age group's share of total population in both years.

\*A statistical "test" of this conclusion is contained in Appendix A.

Table 30  
Average Number of Persons per Household in Each Age Group and Per Cent of  
Total Population in Households Within Each of the Age Groups

Age Group	All Households				Civilian Households Only			
	1960 Number/ Household	% of Total	1966 Number/ Household	% of Total	1960 Number/ Household	% of Total	1966 Number/ Household	% of Total
Below 5	.46	14.2%	.53	15.1%	.30	9.2%	.36	10.4%
5-9	.35	10.7%	.43	12.3%	.26	8.0%	.30	8.7%
10-14	.29	8.7%	.34	9.7%	.28	8.8%	.31	8.9%
15-20	.30	9.2%	.26	7.4%	.40	12.5%	.33	9.5%
21-34	.76	22.8%	.81	23.1%	.56	17.2%	.68	20.0%
35-49	.61	18.7%	.63	18.0%	.69	21.5%	.71	20.8%
50-64	.32	10.0%	.30	8.7%	.47	14.5%	.45	13.2%
65 & over	.20	5.7%	.20	5.7%	.27	8.3%	.29	8.7%
All Groups	3.29	100.0%	3.50	100.0%	3.23	100.0%	3.43	100.0%

Certain changes within the age structure can be recognized; for example, persons under 21 years of age increased their share of total household population at the expense of age groups 21-64. However, in reviewing only the civilian population, persons under 21 lost ground to the older age groups.

The age group most responsible for the shift toward an adult population was that of the 21-34 year olds. For this reason, the shift does not imply a trend toward older - and possibly smaller - households. Actually, the survey results suggest that average size of civilian households has increased. This increase reflects the relatively large number of persons who aged into the 21-34 year old bracket during the 1960-1966 period. As these persons entered the adult population, new household formation occurred. These new young adult households are undoubtedly the reason for the percentage increase recorded in Table 30 within the pre-school age group.

The discussion thus far has emphasized the aging of the 1960 civilian population, and its particular importance to the growth of the 21-34 year old population. Of course, the decision that aging was a more significant factor than migration for this (or any other) age group could only be made after identifying the effect of migration. To do so, appropriate birth and death rates were applied to the 1960 population, and the number of "survivors" computed. The number in the population surviving from 1960, when compared with the actual number accounted for in the household survey, served to identify the migration factor.

In calculating migration, a rate of 55 live births per thousand persons who were members of the household population and were in the age groups 15-49 was employed. Death rates corresponding to that of 1960 were also applied to the 1960 population.

Table 31 presents the expected number of survivors from the 1960 population. These numbers indicate the degree of population change in the absence of in- and out-migration. The difference between expected and estimates (of actual number) amounts to the number attributable to migration.

Table 31  
1966 Population in both Military and Civilian Households

<u>Age Group</u>	<u>Expected Number</u>	<u>Survey Number</u>	<u>Difference (Attributable to migration)</u>
Below 5	4,909	5,760	851
5-9	4,548	4,692	144
10-14	3,453	3,701	248
15-20	2,778	2,823	45
21-34	7,815	8,813	998
35-49	6,856	6,867	11
50-64	3,582	3,319	-263
65 and over	1,891	2,175	284

## EFFECTS OF MILITARY AND NON-MILITARY MIGRATION

No meaningful analysis of growth prospects based on Table 31 is possible without first separating the military and non-military households. For one thing, expansion of the number of military households is considered very unlikely. For another, periodic reassignment replaces older households with younger ones and this turnover confers a "steady state" condition upon the age structure of the military population.

In a sense, the military households can be treated as a "given". As a known quantity, they are particularly useful in identifying the civilian contribution to each number in Table 31. The net effects of civilian migration were derived by deducting the impact of military households from the migration totals, and are entered in Table 32. This table contains the basis for the following conclusions regarding the civilian population:

1. growth in the young adult groups was exclusively the result of aging;
2. in-migration of civilian households with adults in the 35-49 year old market, and with more children of school age per household, constitutes the predominant migration element during the years since 1960; and,
3. in the event that household characteristics of the migration flow persist throughout the planning period, the vast majority of the population will either be of school age or in the working age brackets below 50 years of age.

Table 32  
1966 Expected Population in Civilian Households

<u>Age Group</u>	<u>Number Forecast</u>	<u>Survey Number</u>	<u>Difference (Attributable to migration)</u>
Below 5	3,379	2,600	-779
5-9	1,923	2,177	254
10-14	1,722	2,213	491
15-20	1,892	2,362	470
21-34	5,150	5,007	-143
35-49	4,662	5,156	494
50-64	3,242	3,293	51
65 and over	1,809	2,174	365

The third conclusion was reached after several different applications of the migration rates yielded similar results. Table 33 illustrates methods that differ in results - but not conclusions - when the treatment of migration is varied to develop a projected range for the 1987 population.

Table 33  
1987 Projected Civilian Population based Upon Alternative  
Applications to Migration Figures

<u>Age Group</u>	<u>Surviving Population Plus Migration Constant</u>		<u>Surviving Population Plus Migration in Proportion to Surviving Population</u>	
	<u>Number</u>	<u>Per Cent</u>	<u>Number</u>	<u>Per Cent</u>
Below 5	3,921	12.0%	3,638	9.3%
5-9	2,840	8.7%	3,298	8.4%
10-14	2,807	8.6%	4,919	12.6%
15-20	3,015	9.2%	6,162	15.7%
21-34	6,292	19.3%	6,075	15.5%
35-49	6,975	21.4%	7,615	19.4%
50-64	4,412	13.5%	4,498	11.5%
65 and over	2,398	7.3%	2,991	7.6%
Total	32,660	100.0%	39,196	100.0%

Migration totals for civilian households during the 1960-1966 period were applied to a forecast in two different ways:

1. the figures corresponding to each age group were treated as constants during each five and one-half year period within the 1966-1987 interval; and were added on to the "surviving" population of the preceding period; and,
2. these same migration figures were treated as percentage of the 1960 population; when applied to the appropriate age group populations, each percentage yielded an "add-on" figure during each five and one-half year period up through the year 1987.



The age composition presented in Table 33 does not indicate any trend toward concentration in the 50 and over age groups. This is because the survival rate of persons of these ages is so much lower than the population as a whole. To cause any appreciable gain in their representation, therefore, a considerably larger number of migrants would have to fall within the 50 and over age groups. In view of the evidence at hand, adopting such a position would not correspond to identifiable trends on which every forecast must rely.

## AGE CHARACTERISTICS WITHIN INDIVIDUAL ANALYSIS AREAS

In addition to establishing a basis for projecting population, the preceding analysis of the population-at-large provides the background needed to characterize populations within the various analysis areas of the Key West community.

Each area's population has been examined to determine the average number of persons per household in each age group. Deviations from the averages obtained for the total household population - including both types of households - served as a basis for ranking the separate analysis areas. The first entry in Table 34, Analysis Area 15, represents the population whose age characteristics are least like those of the population-at-large. The last area, Analysis Area 2, contains a population whose age characteristics resemble most closely those of the urban area

Table 34  
Ranking of Planning Analysis Areas According to Similarity of  
Age Structure to the Urban Area Population

<u>Analysis Area</u>		<u>Age Groups Most Responsible for Deviations and Direction of Deviation ( + or - )</u>
Least Similar	15	+ below 5; + 21-34
	4	- 21-34; - below 5
	17	+ 21-34; + below 5
	10	+ 35-49; - 21-34
	16	+ 35-49; - below 5
	7	- 21-34; + 50-64
	6	+ 21-34; - 35-49
	1	- 21-34; + 65 and over
	5	- below 5; - 5-9
	14	- 21-34; - 5-9
	3	- below 5; - 15-20
	8	+ 35-49; - below 5
	9	+ 21-34; - 65 and over
Most Similar	2	- 10-14; - 15-20

Several points can be made regarding the order of the ranking in Table 34. A division of the 14 areas into an upper and a lower half reveals only one area west of White Street included in the upper set. In contrast, four of the seven areas in the bottom set are located in the older part of Key West.

The upper set is generally characterized as larger and more child-oriented households; the opposite is typical for areas of the lower set. However, it can not be concluded that areas are more similar to other areas in their own set. For instance, the most dramatic exception occurs in the case of Area 4. There, the strength of the deviations was sufficient to place it at an extreme from the community-wide average values. Yet, the direction displayed by Area 4's deviations resemble those of Area 14 in the lower set.

It is evident that Table 34 contains a bottom set for which community-wide averages serve as a reasonable proxy. Areas in the upper set have singular characteristics. Table 34 thus helps decide which areas resemble the community-at-large and which do not. To determine which areas resemble one another - rather than the community-at-large - they must be matched against each other and not the entire urban area.

Table 35 transforms the data of Table 34 by classifying areas according to the concentration of adult age groups. A positive concentration means a greater than average number of persons per household in a particular adult age group; a negative concentration just the reverse. Areas with a concentration more or less typical of the entire community would be registered in the column or row labelled "none".

Table 35  
Analysis Areas Classified by Exceptional Presence of Adults in  
Various Age Groups

Negative Concentration	Positive Concentration			
	<u>21-34</u>	<u>35-49</u>	<u>50 &amp; over</u>	<u>None</u>
21-34	-	Area 10	Area 1	Areas 4 and 14
35-49	Area 6	-	-	-
50 and over	Areas 17, 9	-	-	Area 7
None	Area 15	Areas 8, 16	-	Areas 2, 3, 5

To illustrate the use of Table 35, consider the question of which areas have below average number of young adults. Areas 1, 4, 10, and 14 are the entries in the first row because they have below average (i.e., negative concentration) values for the 21-34 year old group.

To find areas that are minor opposites of Areas 1, 4, 10, and 14, the entries in the first column are selected because Areas 6, 9, 15, and 17 all have above average (i.e., positive concentration) values for persons aged 21-34. The precise mirror opposite of Area 10 would be Area 6 because the latter has a positive concentration at the point where the former has a negative concentration, or vice-versa.

Other mirror opposites would be Area 1 versus Area 17 and 9; Area 15 versus Areas 4 and 14. There are no mirror opposites for Areas 16, and 8, Area 7, and Areas 2, 3, and 5.

Use of Table 35 in later planning work can be illustrated by assuming that the future will include an opportunity to locate a neighborhood recreation facility for the elderly. Table 35 indicates that only Areas 1, 4, and 14 are likely to contain concentrations of the potential user groups. A selection of one of these three areas might then be made through analysis of available sites and amenity, and the financial ability of potential users in each area to meet their own recreation needs.

## OTHER SOCIAL CHARACTERISTICS

### Race

Table 36 suggests the possibility of a relative gain by the non-white portion of the urban area's population. Moreover, this increase is the outgrowth - not of substantially more Negroes in the population - but of other types of non-whites.

Table 36  
Population Classified by Race

<u>Race</u>	Percentage of Total Population	
	<u>1960</u>	<u>1966</u>
White	88.2%	85.3%
- Latin	*	10.7%
- Other	*	74.6%
Non-White	11.8%	14.7%
- Negro	11.4%	10.4%
- Other	.4%	4.3%

\*Census makes no distinction.

The sample response is one which makes it extremely unlikely that the racial character of the current household population bears a close resemblance to that of 1960. The factor responsible for this change appears related to the racial composition of military households. Whereas in 1960, only 4 per cent of the 6,919 military personnel residing in Key West were non-white, the comparable figure from the recent survey is 7.9 per cent.

Within the urban area, the following analysis areas exhibit positive concentrations of non-whites within their respective populations:

- a. Area 1 (68.5% non-white)
- b. Area 2 (36.6% non-white)
- c. Area 3 (20.5% non-white)

### Sex

Considering the household population only - that is, all persons not in group quarters - the sex composition has changed very little. Table 37 records the percentage of the household population that was male and female in both years.

Table 37  
Sex Composition of the Household Population, Key West Urban Area

<u>Year</u>	<u>Percentage</u>	
	<u>Male</u>	<u>Female</u>
1960	49.1%	50.9%
1966	49.7%	50.3%

The median values for number of males and females per household indicate that about 50 per cent of the households had at least one male and one female member. The other 50 per cent had less than that amount. Because instances of households with two or more male and/or two or more females far outnumber the single person households, the averages (i.e., mean) for males and for females per household was 1.74 per cent and 1.76 per cent, respectively.

Generally, in areas with a low percentage of household heads who are married, there is also an above average percentage of female household heads. A classification of areas in which there exist above average concentrations of households headed by females is presented in Table 38.

Table 38  
Areas of Concentration of Households Headed by Females

Type 1 Prevalence of Female Household Heads with One or More Families <u>Areas 2, 3, 7</u>	Type 2 Prevalence of Female House- hold Heads Without a Family <u>Areas 1, 4, 5, 14</u>
---	--

The two categories were set up to point out the following distinctions:

- a. female household heads in Areas 2, 3, and 7 are far more likely to be still in the labor force than their counterparts in Areas 1, 4, 5, and 14; and,
- b. the presence of retiree households is twice as common in areas with a high incidence of female household heads without families.\*

## EDUCATION AND OCCUPATION IN THE URBAN AREA

For analytical purposes, the preceding sections have distinguished between and traced changes in the age characteristics of military and non-military households. In the case of educational attainment, such a distinction is neither as practical nor as necessary. For instance, no convenient source exists by which the 1960 educational levels of military personnel in group quarters and in households can be sifted out of the population-at-large. Secondly, the Census recorded the educational level of all persons 25 and older, whereas the survey focused on educational achievement of the 18-64 year old groups.

Despite the limitations imposed on comparability, the limiting factors would not tend to reverse the direction of change revealed by the comparison. For example, the inability to exclude military personnel in group quarters becomes rather insignificant when it is realized that 87 per cent were automatically excluded from the Census data by virtue of their youth.

No attempt is made to interpret the statistics contained in Table 39. Nonetheless, it should be noted that 20.4 per cent of the persons between 18 and 64 years of age in 1966, had more than a high school degree. In contrast, this was true of only 14.2 per cent of the persons in the 1960 population who were 25 or older.

\*Average number of retirees per household in Areas 2, 3, and 7 was 0.21; in Areas 1, 4, 5, and 14, it was 0.43.



Table 39  
Educational Level of the Population

Year	Less than 12 grades	Per Cent of Population that Completed		
		High School	Some College	Four or more years of college
1960	37.3%	48.5%	7.0%	7.2%
1966	47.0%	32.6%	12.3%	8.1%

Aside from the difference in the age groups included by the Census and the 1966 survey, part of the reason for the higher percentage with less than a high school degree may be the incidence of 15-20 year old drop-outs. The survey suggests that over 15 per cent of the 15-20 year olds have not graduated from high school and are not in attendance. The 15 per cent figure means that some 313-333 such drop-outs are present in the community. The percentage may be compared against the 17+ per cent for the nation as a whole.

Far less difficult is the task of gauging relative gains among the various occupational groups since 1960. The change in military personnel in group quarters was identified in Table 28 and has again been screened out for reasons mentioned earlier.

As Table 40 indicates, the professional and services groups gained in their share of the employed household population. To do so, of course, these groups must have added members at a faster rate than did either the military, clerical and sales, or the blue collar groups.

Table 40  
Distribution of Employed Household Population by Type of Occupation

Occupation	Per Cent of Total	
	1960	1966
White Collar	32.3%	33.5%
- Professional and kindred	15.2%	19.4%
- Clerical and sales	17.0%	14.1%
Services	11.7%	12.7%
Blue Collar	24.8%	25.2%
Military	31.3%	28.4%
Miscellaneous	-	.2%
Total	100.0%	100.0%

The survey information classified about 6.5 per cent of the employed as seasonal or part-time workers. A figure of 8 per cent was recorded for workers employed less than 14 weeks in 1959, and is roughly comparable. Differences exist in the relative mix of occupations for persons with full-time jobs only and for persons employed in any capacity. These differences afford an opportunity to isolate the occupational fields which provide the least amount of job stability.

Table 41  
Occupations of Persons Holding Full-Time Jobs, and of Persons  
Employed on any Basis in 1966

<u>Occupation</u>	<u>Per Cent of Total</u>	
	<u>Only Persons Holding Full-Time Jobs</u>	<u>Persons Employed on Any Basis</u>
White Collar	28.5%	33.5%
- Professional and kindred	18.1%	19.4%
- Clerical and sales	10.4%	14.1%
Services	9.9%	12.7%
Blue Collar	28.2%	25.2%
Military	33.2%	28.4%
Miscellaneous	.2%	.2%

It is fortunate that most part-time or seasonal workers are in a household with a full-time worker. More than 80 per cent of the time, these workers are females who are not household heads. They find temporary work as the demand for employees in clerical, sales, and service occupations increases at certain times of the year.

It is not known whether many of the part-time or seasonal workers would prefer steady work. What does seem likely is that they might very well prefer more work on some basis than has been available. Certainly, the evidence is mixed; on the one hand, relative declines in the age groups providing the higher rates of female employment may totally account for the reduction in the labor force participation rate of females. On the other hand, occupations with heavier demands for labor other than full-time have not kept pace with job generation as a whole.

The focus of the debate is, of course, changes in the sex composition of the labor force and in labor force participation rates. These are shown in Table 42.

Table 42  
Composition of the Labor Force and Participation Rates by the Household Population  
Aged 18 - 64

<u>Year</u>	<u>Composition</u>		<u>Per Cent of Population in Labor Force</u>	
	<u>% Males</u>	<u>% Females</u>	<u>% Males</u>	<u>% Females</u>
1960	73.9%	26.1%	87.6%	29.3%
1966	79.6%	20.4%	92.8%	28.2%

## DIFFERENCES BETWEEN INDIVIDUAL ANALYSIS AREAS

Seven areas contained households in which the frequency of college graduates exceeded that of the community-at-large.\* Eight areas exhibited better than average percentages of the labor force in professional and kindred occupations.\* These areas are recorded in Table 43.

Table 43  
Analysis Areas with Above Average Educational Levels and  
Professional Occupations in the Labor Force

<u>Above Average Per Cent of College Graduates</u>	<u>Above Average Per Cent of Professional Occupations</u>
Areas 16, 10, 5, 15, 2, and 8	Areas 16, 10, 8, 5, 6, and 2

The evident correlations between these two labor force characteristics has been measured by determining the degree of correspondence between the rank held by each area for both characteristics.\*\* Area 15 is anomaly, and it is suspected that many of the military personnel residing there would, as civilians, be in professional occupations.

The strength of other evident correlations was also investigated; the objective was not to dwell on the obvious, but rather to identify areas in which the associations were overturned. For instance, Areas 2 and 8 are exceptions to the pattern of increasing numbers of full-time employed in areas with relatively few retirees in the population.\*\*\* Area 2 has, in a sense, too few retirees to warrant such a low value for the number of full-time employed. In contrast, Area 8 has too many retirees to warrant such a high value for the number of full-time employed. It therefore seems likely that unemployment is very high among households in Area 2 and very low among households in Area 8.

\* Based on data for the oldest person employed full-time.

\*\* Using Spearman's formula for rank correlation which gave an  $r = .653$  for all areas, and  $r = .841$  when Area 15 is ignored.

\*\*\*  $r = .763$  for all 14 areas, and  $.881$  for all areas when 2 and 8 are excluded.

Areas 5 and 17 do not follow the pattern of either:

- a. increasing frequency of college graduates with decreases in the number of retirees per household;\* or,
- b. increasing frequency of college graduates with increases in the number of full-time employed per household.\*\*

Area 5 has "too many" retirees to warrant so high a frequency of college graduates. But, because Area 5 has the highest average household income among the areas with high number of retirees, it is believed that the majority of older persons with college educations are concentrated in this area. This concentration serves to explain why pattern (b) does not hold for Area 5.

Area 17 has "too few" college graduates to warrant so high a value for number of full-time employed per household. It also has too few retirees to "explain" the low per cent of college graduates. An explanation for Area 17's lack of pattern is found in the cross-pressure of two characteristics that pull the number of full-time employed in opposite directions. The per cent of college graduates in Area 17's households is not sufficiently low to counteract the positive strength exerted by the virtual absence of retirees.\*\*\* In other words, the lack of retirees in Area 17 is a more powerful booster than the lack of college graduates is a depressant.

## CHARACTERISTICS OF HOUSING INCOME AND RESIDENTIAL MOBILITY

A major change has occurred in the housing market since 1960. This change can be noted by the gains recorded for trailer units and the relative decline of units to be found in apartments.

Table 44  
Housing Unit Structural Types

<u>Year</u>	<u>Single-Family</u>	<u>Per Cent of All Units In</u>		
		<u>Duplex</u>	<u>Apartment</u>	<u>Trailer</u>
1960	51.4%	12.8%	33.3%	2.5%
1966	51.7%	12.7%	24.2%	11.4%

\*  $r = .565$  for all 14 areas, and  $.815$  for all areas when 5 and 17 are excluded.

\*\*  $r = .583$  for all 14 areas, and  $.633$  for all areas when 5 and 17 are excluded.

\*\*\* Recall that  $r = .583$  for all areas and  $.633$  without Areas 5 and 17 when per cent of college graduates is correlated with numbers of full-time employed. But  $r = .858$  for areas with or without 5 and 17 when number of full-time employed is correlated with number of retirees per household.

Were it not for the shift from apartment to trailer units, the growing percentage of all units that are owner occupied would be hard to understand. This shift explains the surge recorded in the number of homeowners within the urban area.

Table 45  
Renter and Owner Occupied Units

<u>Year</u>	<u>Per Cent of All Units</u>	
	<u>Renter Occupied</u>	<u>Owner Occupied</u>
1960	61.9%	38.1%
1966	49.5%	50.5%

The shift to trailer units has triggered other consequences as well. The median value of ownership units has declined by 12 per cent while that of monthly rental charge has soared. It is believed that vacancies in apartment units west of White Street - particularly in Area 2, and to a lesser degree in Areas 7, 8, and 9, are on the rise. The response to rising vacancies has been to increase rent presumably to cover operating and maintenance cost.\* Compared to the 16.4 per cent increase registered by median household income, median rental has risen 43.8 per cent over 1960.

Table 46  
Median Housing Costs and Household Income

	<u>1960</u>	<u>1966</u>	<u>Per Cent Change</u>
Household Income	4,736	5,512	16.4%
Monthly Rental	64	92	43.8%
Value of Ownership Units	10,700	9,400	-12.1%

Several differences are apparent in the mobility pattern of households in 1960, and those of 1966. Exactly half of the 1960 households had been living in Monroe County in 1955, whereas 55.5 per cent of the households interviewed in 1966 were in the County in 1960. Although the year's difference in the 55-60 and 60-66 period does not make the data strictly comparable, the extra year could only act to understate the per cent of households who have not moved. Therefore, the bias could not alter the conclusion reached in the direction of greater stability. Table 47 presents the basis for this conclusion.

\* A second, but less likely explanation, is that only units in the lower rental range have experienced increases in vacancies. This is unlikely because household income gains have not reduced the market for low cost housing.



Table 47  
Former Place of Residence of Households in the Key West Urban Area

Year	Per Cent of all Households with Residence 5-6 Years Ago in				
	<u>Same House</u>	<u>Monroe County</u>	<u>Florida</u>	<u>U. S. A.</u>	<u>Elsewhere</u>
1960	27.5%	22.5%	6.2%	39.6%	4.2%
1966	32.7%	23.1%	7.8%	30.7%	5.7%

Of the 1966 households who were in Monroe County in 1960 but no longer occupied the same house, the vast majority moved from one area of the community to another.\*

No difficulty is posed in reconciling the following conclusions:

- a. that a higher percentage of households, currently occupying a housing unit there have occupied for at least 5 to 6 years, signifies greater general stability than was true in 1960; and,
- b. that the percentage of 1966 households whose residential location has not been as stable as those described in (a) did, despite this general stability, shift the predominantly rental housing market of 1960 into a state of balance between owner and renter occupied units.

Adding support to the first conclusion is the drop in the per cent of all households with less than a year of residency at their present address. Lending support to the second conclusion is the survey statistic on median years at present address: half of all households were not at the same address 3.3 years ago. Statistics pertinent to this discussion have been assembled in Table 48.

Table 48  
Length of Residence at Present Address

	<u>1960</u>	<u>1966</u>
Per cent of Households at Present Address Less Than a Year	44.8%	33.5%
Median Years at Present Address	-	3.3

\* Of the 23.1 per cent, 20.9 per cent had moved from another area of the community to their present address, 1.6 per cent had moved to another house in the same area, and 0.6 per cent had moved from parts of Monroe County outside the urban area of Key West.

## ANALYSIS OF RELATIONSHIPS BETWEEN THE HOUSING, INCOME, AND MOBILITY CHARACTERISTICS OF THE URBAN AREA

Interpretation of these relationships rests on the data presented in Table 49. The types of characteristics on which the 14 analysis areas are ranked does not exhaust the list of possibilities. But the data does identify the relative position of each area with respect to 11 variables, and supports the conclusions that follow.

### Income and Housing

The strongest associations are the value increases of owner occupied housing observed with every increase in household income. The only notable exception to this pattern occurs in Area 17, and is caused by the great per cent of owner occupied units that are trailers.\*

A somewhat weaker pattern exists when variation in rental charges are correlated with value changes of owner occupied housing. The weakness is somewhat corrected by elimination of Areas 6, 7, and 17 from the correlation. Area 6 is regarded as the "reception depot" of the community; it receives a substantial share of civilian households searching for temporary rental housing. As a result, the turnover rate is the highest of any area and the scale of rents appear too high for the value level of owner occupied units in the area.\*\* The presence of military personnel, accounting for only 14.8 per cent of the households, is too low to explain this condition.

Area 7 is inconsistent with the pattern for precisely the opposite reason: rents are too low in comparison with ownership values. Public housing "explains" the discrepancy. And again, in Area 17, the number of trailers serves to depress ownership values, and give rents the appearance of being too high.

A pattern, formed by increases in the level of rents as household income increases, is weaker still.\*\*\* This means that rents reflect the household income of an area much less than do ownership values. It also implies that households with higher incomes are less likely to be renters than are households with lower incomes. In Areas 6 and 7, however, a contrast exists; the "reception depot" does not contain ownership households with higher incomes than renter households. And, because of public housing, renter households have incomes far below the level expected on the basis of the value of ownership housing in Area 7.

\*  $r = .881$   
 $r = .920$   
= 17

\*\*  $r = .705$   
 $r = .841$   
= 6, 7, 17

\*\*\*  $r = .728$   
 $r = .828$   
= 6 and 7

Table 49  
Ranking of Analysis Areas by Type of Characteristic

Characteristic	1	2	3	4	5	6	7	8	9	10	14	15	16	17
Median Rental*	14	10	7	13	4	5	11	6	9	2	12	3	1	8
Median Home Value*	14	7	9	12	6	10	4	3	8	1	11	5	2	13
Household Income*	14	10	9	13	4	12	5	3	6	2	11	7	1	8
Plan to Move*	14	13	11	12	4	1	10	7	6	9	8	5	2	3
% of Households in Same House**	14	10	9	13	11	6	12	8	5	7	3	1	4	2
Median Years at Present Address**	13	10	8	14	11	6	12	9	3	7	4	1	5	2
Mean Number of Moves*	3	10	7	5	14	6	9	4	11	13	2	12	1	8
Median Household Size*	8	12	11	14	13	4	10	7	9	5	3	1	2	6
Median Years in Key West**	14	5	8	13	11	3	12	9	4	7	10	1	6	2
Number of Moves per Year of Residency Based on Median Years in Key West*	11	8	9	12	14	3	13	7	5	10	6	1	4	2
Number of Moves Per Year of Residency at Present Address*	11	10	8	13	14	6	12	7	5	9	2	3	4	1

\* 1 = greatest value.

\*\* 1 = lowest value.

## MOBILITY AND PLANS TO MOVE IN 1967

A little over 11 per cent of the households in the urban area intend to move during 1967. About a third of these intend moving elsewhere in the Key West area, while most of the remainder are planning to move outside Florida.

Households intending to move in 1967 are seldom found in areas with high percentages of households still living in the same units they occupied in 1960. Of the areas in which such households tend to be clustered, this pattern would explain their presence in Areas 16 and 17. It would not, however, account for the concentrations in Areas 6 and 6, or for the lack of concentration in Area 14.\*

Area 6 can be explained by recalling its "reception depot" characteristics: high percentage of units in apartment types and a rental level above that normally associated with the corresponding value of owner occupied units. The inconsistency - in Area 5 - is regarded as ambiguous; a high per cent of single-family units within the rental market is coupled to a high per cent of households planning to move. A sizable vacancy potential could therefore materialize as these households shift into ownership elsewhere.

The failure of Area 14 to follow the pattern illustrates one surprising facet to the analysis of mobility. Area 14 is one of four areas with more than 25 **per cent of the households being military**. Of the four areas - Areas 9, 14, 15, and 17 - only in the latter are plans to move at all prevalent. In terms of the year ahead, households that **intend to change residential location** will generally be civilian.

Evidence that military households do not signify an exceptionally high turnover rate for the year ahead was noted when - on an area-by-area basis - the per cent of households planning to move was plotted against the duration of residency at their current address.\*\* In examining the reasons for the weakness of this association, areas abounding in military households were found to contain fewer households with plans to move than was the case for other areas - similar with respect to duration of residency - that contained civilian households primarily.

Area 5 and 6 offered another obstacle in the way of complete correspondence between areas with households averaging the most years at the same address and areas having the lowest per cent of households intending to move. In Areas 5 and 6, high percentages of households resolved to move were matched against a relatively long period of time lived by the typical household at its present address. Thus, civilian households will be much more responsible for (high) turnover during 1967 because they intend to move more frequently within the community.

\*  $r = .684$   
 $r = .909$   
- 5, 6, and 14

\*\*  $r = .648$   
 $r = .700$   
- 5, and 6  
 $r = .477$   
- 5, 6, 9, 14, 15, and 17

It is also true that households intending to move for the first time are outnumbered by those with a history of moving. Plans to move are more common as the annual number of moves during residency in Key West increases. It is interesting to note that Area 5 is the one "hold-out;" households planning to move are likely to contain an uncommon number of "first-timers." As previously mentioned, there is a large proportion of the rental market in Area 5 in single family dwellings. This fact could signify that - first time or no - the households planning to move are casting their first vote for home ownership.

There is also more prevalence of plans to move among households that are recent arrivals to the area.\* This corroborates earlier findings that also suggested that the brunt of local moves are made early in the typical household's history of residence within Key West.

## MOBILITY AND INCOME

There is little income distinction to be made between households with and without plans to move.\*\* Nor does income relate to the number of moves households have already made during residency in the Key West area.\*\*\*

There is, however, a stronger probability for renter households to have plans if they are high income households.\*\*\*\* Undoubtedly, this is a reflection of renters who are able to afford ownership. Such a probability does not exist in terms of households who own their own units. Only in Areas 6 and 17, where ownership values dip below the level expected on the basis of rents, do homeowner households show comparable tendencies to move.\*\*\*\*\* In these areas, there is also a prevalence of young adult households, a group generally more mobile than older households of the same income, size, etc.

That youth plays a definite role in mobility is nowhere more evident than in Area 10. Area 10 has many of the conditions associated with average percentages of households intending to move. Yet the virtual absence of young adult households, i.e., the 21-34 year olds, is an over-riding factor that acts to insure residential stability within such high value ownership areas.

\*  $r = .603$

\*\*  $r = .420$

$r = .476$

- 6, 7, 10, and 17

\*\*\*  $r = -.035$

\*\*\*\*  $r = .673$

$r = .737$

- 10 and 17

\*\*\*\*\*  $r = .222$

$r = .505$

- 6, 10, and 17



## TRAVEL PATTERNS AND AUTO OWNERSHIP

If the movement and storage of automobiles is now a problem in the Key West urban area, it is going to get worse before it gets better. The population of automobiles is growing at twice the rate of people or of the households they form. The difference between the growth rates shown in Table 50 reflect the dwindling number of households without an automobile, and the increasing per cent with more than one.

Table 50  
Recent Growth Rates in Automobiles, Household Population, and Households

	<u>Automobiles</u>	<u>Households</u>	<u>Household Population</u>	<u>Automobiles per Household</u>
1960	9,105	9,720	32,209	0.93
1966	11,336	10,900	38,150	1.04
% Increase	24.5%	11.3%	18.4%	11.8%

One apparent consequence of this differential in growth is the declining per cent of persons who either walk or ride the bus to and from work.\* Surrender to the automobile as the means of travel to work may not, however, be due solely or directly to rising ownership rates.

One other possible cause may be increased difficulties in reaching the work place either on foot or by bus. Although no comparable measure exists for 1960, an attempt to trace the per cent of households with work places in or adjacent to their area of residence has been made. Using the rank correlation procedure, factors that might be associated with any tendency to work close to home were analyzed. The ranking of each area for these factors is presented in Table 51.

Data in Table 51 does yield a moderately strong tendency for households working in or adjacent to their area of residence to use some means of travel other than a car for their trip to work.\*\* A much weaker association exists between a reduction in the per cent of such households as household income increases.\*\*\*

Analysis of the rankings reveals that 7 of 14 areas have greater percentages of households working near home than their income rank would signify if the correlation were close to perfect (i.e.,  $r = .90$  to  $.99$ ). Five of these seven are members of the upper income set; only two are in the seven areas ranked lowest by income.

\* 14.1 per cent in 1960 vs. 8.0 per cent in 1966.

\*\*  $r = .631$ .

\*\*\*  $r = .393$ .

It thus seems that households with better incomes have an easier time avoiding use of a car on the work trip. The greatest irony centers on Area 2 - the area of highest civilian job concentration - and yet the area in which the pattern between income and work places near home is most sharply contradicted. Since the households in Area 2 have neither high car ownership ability nor proximity to work, it is not surprising that their patronage of public transit ranks highest.\*

The intent of this discussion is not merely to suggest that high income groups have more opportunity to reduce their work travel, but to point out that there are no purely physical solutions to traffic. As a higher percentage of low income households reach the threshold point of car ownership, they too will rely on the automobile as the sole means of travel.\*\* That is, unless the opportunity to live near the work place becomes more prevalent than is now the case.

Finally, the possibility that the military household's cash income, being below that of the same household's earning power in civilian life, could deflate the percentage of lower income households working near home, has been explored. Since no households in Area 13 were interviewed, the conjecture might be that military households are more isolated residentially from their work place than is the civilian population.

However, when the four areas with heavy concentrations of the military are excluded from the analysis, the tendency for higher incomes to be associated with lower percentages of jobs near home is weaker than originally.\*\*\* Despite the visibility of military work trips, they are not so significant a quantity as the more diffuse civilian work trips. And this, of course, is much the same kind of conclusion reached earlier regarding mobility of civilian and military households. If the size of the military establishment has stabilized, the challenge for the future will be increasingly centered on civilian problems and needs.

\* 13.3 per cent of the households ride the bus to work, a percentage 10 times as great as that for the community-at-large.

\*\* Consider the increase of 7,700 more cars in the area which can be projected to accompany the addition of 3,200 more households and rising auto ownership by the mid-1980's.

\*\*\*  $r = .067$  versus  $r = .393$  for all zones.  
- 9, 14, 15, and 17.

Table 51  
Ranking of Analysis Areas by Travel Characteristics

Characteristic	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Per Cent of Households Working In Area or Adjacent to Area of Residence**	13	4	7	14	5	12	8	10	11	9	6	1	3	2
Autos Per Household*	14	12	11	13	4	9	8	3	7	2	10	8	1	5
Median Household Income*	14	10	9	13	4	12	5	3	6	2	11	7	1	8
Per Cent Households Using Personal Auto for Work Trip*	14	11	8	13	3	9	10	7	6	4	12	1	5	2

\* 1 = greatest value.

\*\* 1 = lowest value.

## APPENDIX A

### The Statistical Test of Mean Age

The object is to establish the probability that the sample statistic on mean age of the 1966 population is sufficiently close to the mean age of the 1960 population to infer an absence of change in the age structure.

To do so, we hypothesize an absence of change and then attempt to disprove that hypothesis.

We are prepared to reject the hypothesis if the 1960 mean age does not lie on the interval extending on either side of the sample statistic, a distance equal to 1.96 times the standard deviation of the sample divided by the square root of the number in the sample.

In performing the test described above, we admit that 5 per cent of the time the interval so defined will not contain the population's mean age. And that is precisely the objective mentioned above: to establish the probability or risk that we would reject the hypothesis even though it is true. Note, however, that if we are unable to reject the hypothesis, this is not tantamount to proving it is true. We simply accept it as the truth given the level of risk established.

In testing for the mean age of both the civilian population and the total population, no rejection was possible for the civilian population, but rejection was dictated for the total population.

### Results of Test Computation

- a. Civilian population: mean age in 1960 was 32.40.  
Computed interval: 32.03 to 33.23 for sample statistic of 32.63.
- b. Total population: mean age in 1960 was 27.72.  
Computed interval: 26.62 to 27.50 for sample statistic of 27.06

Thus, absence of change since 1960 in the mean age of the civilian population was accepted, whereas for the total population, such an absence was rejected.

## APPENDIX B

### Crude 1960 Birth and Death Rates: Key West Urban Area

#### A. Live Births per 1,000 Population Age 15-49 and Living in Households

<u>Annual</u>	<u>Five and One-half Year Interval</u>
55.6	305.8

#### B. Deaths per 1,000 Population Living in Households

<u>Age Group</u>	<u>Annual</u>	<u>Five and One-half Year Interval</u>
Under 5	8.0	44.4
5-9	0.7	3.8
10-14	0.3	1.6
15-20	0.7	3.8
21-34	1.5	8.2
35-49	3.1	17.0
50-64	15.1	83.0
65 and over	63.7	350.0



## SURVEY OF ECONOMIC CHARACTERISTICS

### INTRODUCTION

All local economies are unique. Although they can be classified according to common characteristics such as port activities, trade or related facilities or tourism service, each local economy represents a cluster of economic functions that is different from any other. Because of these differences, each must adopt its own approach to its future.

The ability of an area to support its population at a desirable level determines the well being of its economy. The approach taken in this study, then, is to view the Key West economy in terms of income and employment, the purpose being to evaluate the strengths and weaknesses of its various sectors.

In performing this analysis, it is necessary to select an area for study which is broad enough to include the total local labor supply and places of employment for which statistics are available. Monroe County is the smallest geographical area which may readily be analyzed statistically. Whenever possible, the special role of Key West as the dominant population, employment, financial, trade and governmental center of Monroe County has been identified.

### SOURCES OF INCOME IN MONROE COUNTY AND KEY WEST

Income comparisons serve as a good measure of the past, present and future prospects for growth and development of a community. When traced to their source, it is possible to discover which elements of the economy are increasing or conversely stagnating in their importance.

Total personal income is defined as the total current income received from all sources by residents of a specific area, in this case Monroe County. Table 1 presents the statistics tracing total personal income in Monroe County from 1958 to 1962.

Table 1  
Percentage of Total Personal Income by Primary Class\*

	1958			1959			1960			1961			1962		
	Monroe Absolute (000)	Mon. %	Fla. %	Monroe Absolute (000)	Mon. %	Fla. %	Monroe Absolute (000)	Mon. %	Fla. %	Monroe Absolute (000)	Mon. %	Fla. %	Monroe Absolute (000)	Mon. %	Fla. %
Total	83.3			117,051			123,025			98,018			103,248		
Wage & Salary	66.0	79.3%	59.2%	96,637	82.6%	58.8%	99,247	80.7%	58.6%	75,531	77.0%	58.5%	79,952	77.4%	58.7%
Other Labor	.7	0.8%	1.7%	1,005	0.9%	1.7%	1,389	1.1%	1.6%	1,042	1.1%	1.8%	1,201	1.2%	1.8%
Proprietors Inc.	5.6	6.7%	15.5%	5,837	5.0%	15.6%	6,937	5.6%	14.5%	6,469	6.6%	13.6%	6,786	6.6%	13.1%
Property Inc.	6.2	7.4	15.5%	8,183	7.0%	15.7%	9,513	7.8%	16.8%	8,443	8.6%	16.8%	8,156	7.9%	17.1%
Transfer Payments	4.8	5.8%	8.1%	5,389	4.6%	8.2%	5,939	4.8%	8.5%	6,533	6.7%	9.3%	7,189	6.9%	9.3%

\*Source: Economic Leaflets, Bureau of Economic and Business Research, University of Florida.

The table clearly reflects the overwhelming importance of wage and salary workers in the Key West economy. The only other sector of the economy which comes close to the over-all state average is transfer payments. This would indicate that in addition to the military sector of the economy, Key West also serves as a significant retirement center. Although the Population Study showed that Key West had a lower percentage of population aged 65 and over in 1960 in comparison to the State of Florida, the transfer payments shown on Table 1 indicate that it is a retirement center. This can be explained by the fact that possibly a large number of retirees were previously career personnel in the Armed Forces and hence would be younger than 65. The other three sectors from which personal income is derived are shown to be much below the state average.

The statistics dealing with per capita income are another measure of the overall wealth of an area. Per capita figures represent an artificial average and do not measure the relative financial position of individuals. The advantage of using these figures is that it relates growth of total income to the growth or decline of population of the area. In other words, if there was a 10% increase in total personal income and a 15% increase in the population, it would mean that the money must be distributed more sparingly. If Key West is going to remain a viable economic entity, per capita income must rise along with total personal income.

Table 2  
Per Capita Income in Constant (1963) Dollars \*

	<u>% Change in Per Capita Income</u>				
	<u>1950</u>	<u>1958</u>	<u>1963</u>	<u>1950-58</u>	<u>1958-63</u>
Florida	\$ 1,060	\$ 1,738	\$ 2,158	64.0%	24.2%
Monroe Co.	\$ 1,141	\$ 1,762	\$ 2,256	54.4%	28.0%
Monroe Co. As % of Florida	\$ 107.6	\$ 101.4	\$ 104.5		

\*Source: Business and Economic Dimensions, June 1965, Journal of the Graduate Faculty, College of Business Administration, University of Florida.

Table 2 shows that Monroe County per capita income has increased at approximately the same rate as that for the entire State of Florida, and hence it has remained among the highest counties in the State as far as per capita income is concerned. In 1963, Monroe County possessed the twelfth highest per capita income rate of all 67 counties in the State.\* In comparison to the entire United States, its per capita income of \$2,200 was only fractionally above the entire national average. Also, because of the atypical geographic conditions and the correspondingly higher cost of living index, it could not be assumed that the Monroe County population is wealthier.

In order to understand more fully the present assets and liabilities of the Key West economy, a review of the sources of wage and salary income is necessary. The statistics detailing this information are presented in Table 3 and Charts 1 and 2.

The estimates presented in Table 3 are for all Monroe County and all civilian employment. This means that Table 3 encompasses all wage and salary workers, self-employed and proprietors income. This table lends additional support to the hypothesis that the Key West economy is oriented to three major economic functions, those being:

1. Fishing
2. Tourism
3. Military

The importance of the fishing industry is clearly indicated in the table by relating the Monroe County percentage to the State percentage total. In all three reference years included in the table, the Monroe County total significantly exceeds that of the State. The second major element of the Key West economy, tourism, is represented in Table 3 by two categories, trade and services. The table shows that these two sectors have approximately the same percentage of income derived from them in Monroe County as the entire State does. This in itself is significant in that the entire State is oriented toward attracting and serving the tourist. The final significant sector of the Monroe County economy is the government. The table shows that approximately one-third of the civilian wages and salaries are attributable to employment by the government. It is important to note the fact that the figure presented in Table 3 only represents compensation to civilians employed by governmental agencies. The amount of income received by members of the Armed Forces who are stationed in the Key West area has been excluded from this table because complete information for the three reference years used was not available. A later section of this report will present the statistics showing the importance of the Armed Forces in the overall Key West economy.

\*Business and Economic Dimensions, June 1965. College of Business Administration, University of Florida.

Table 3  
Distribution of Wage and Salary Income, Monroe County\*

	1958			1960			1962		
	Monroe Co.		Fla. %	Monroe Co.		Fla. %	Monroe Co.		Fla. %
	Absolute (000)	%		Absolute (000)	%		Absolute (000)	%	
Total Wage and Salary**	41,804			46,888			52,033		
Agriculture		***	6.9	46	0.1	6.3	52	0.1	6.3
Manufacturing	1,463	3.5	12.5	1,594	3.4	13.7	1,301	2.5	14.9
Mining, Fish & Forestry	3,553	8.5	0.9	2,860	6.1	0.8	3,434	6.6	0.8
Construction	4,013	9.6	11.8	5,252	11.2	10.8	5,152	9.9	8.9
Trans., Comm., & Utilities	1,630	3.9	8.1	2,063	4.4	7.8	2,445	4.7	7.5
Finance, Insurance, Real Estate	1,965	4.7	7.2	2,673	5.7	7.8	2,550	4.9	7.7
Trade	7,859	18.8	23.6	8,768	18.7	23.5	10,198	19.6	23.2
Services	5,936	14.2	16.0	7,502	16.0	16.2	8,586	16.5	16.4
Government (civilian)	14,882	35.6	12.7	15,614	33.3	12.8	17,743	34.1	14.0
Other	502	1.2	0.3	516	1.1	0.3	572	1.1	0.3

\* Source: Economic Leaflets, Bureau of Economic and Business Research, University of Florida.

\*\* Compensation to the Armed Forces is excluded.

\*\*\* Less than .05%.



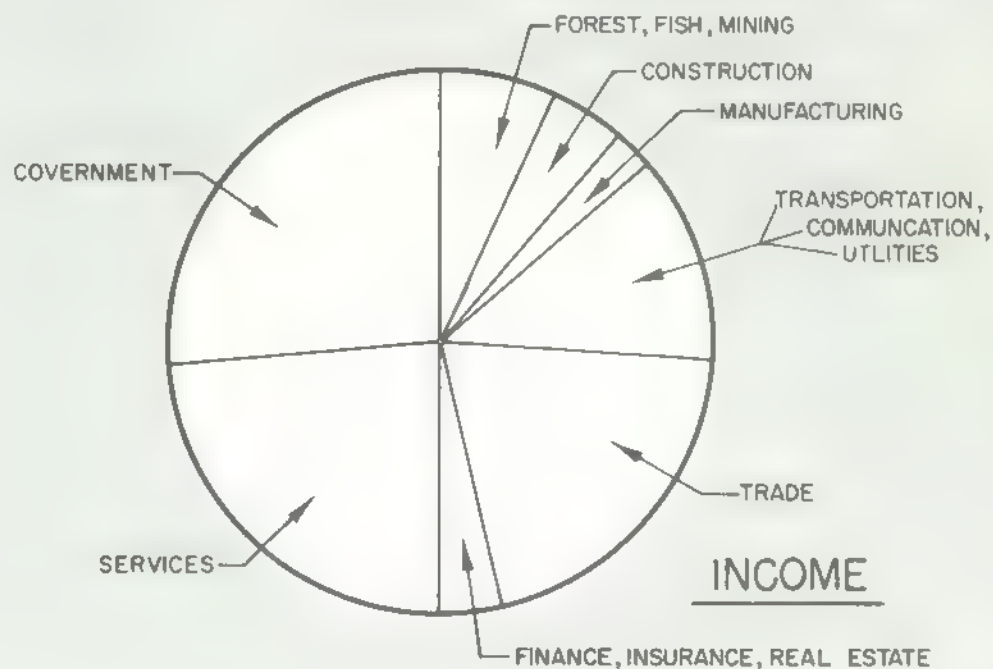
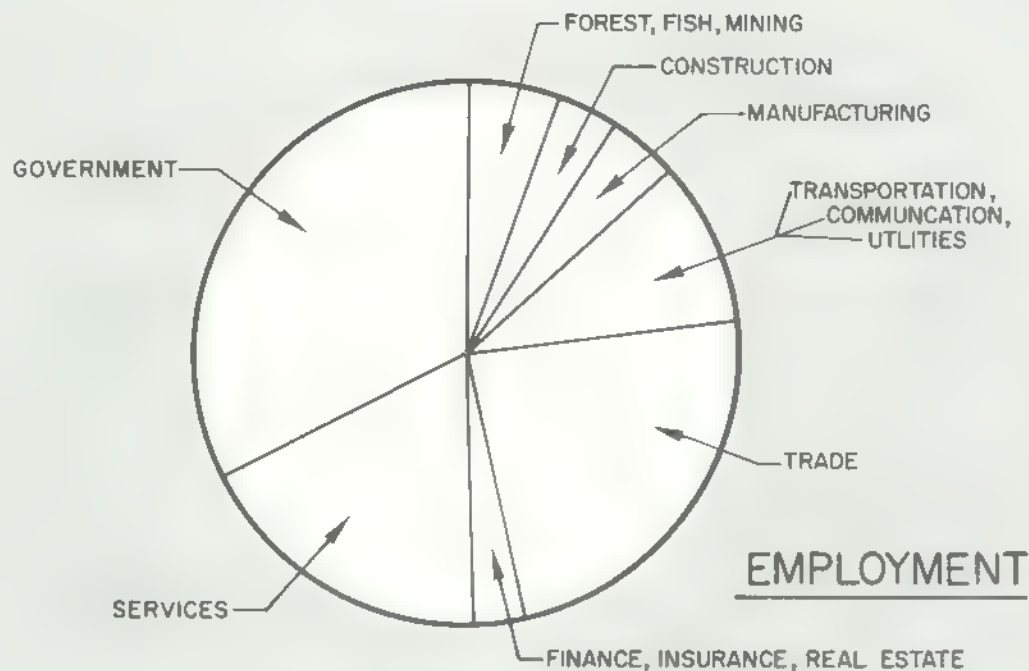
Table 3 also shows that manufacturing in the Key West area is almost non-existent. This is no doubt the result of a combination of characteristics prevalent in Key West. First, the atypical geographic characteristics serve to make Key West an area which has no tributary hinterland. Secondly, the small amount of land area (approximately 3,335 acres) makes it mandatory that only operations with high worker per space ratios be established in Key West. Thirdly due to the atypical geographic conditions, there would be correspondingly higher cost associated with the distribution of finished products.

The other category shown on Table 3 worthy of mention is contract construction. The table shows that in 1958, construction in Monroe County was slightly below the State total. Since that time, it has risen slightly above the State total indicating that a significant amount of construction is occurring in the Key West area. This facet of the economy will be examined in greater depth later in the report.

Given these income totals for Monroe County, the next procedure is to segregate the percentage that can be allocated to the Key West Planning Area. The methodology employed in this procedure is explained in Appendix A of the report. A synopsis of the material presented in Appendix A is presented in Table 4.

Table 4  
Key West Income & Employment 1960 & 1965

	1960 Emp.	% Dis	1960 Payrolls (000)	% Dis.	1965 Emp.	% Dis.	1965 Payrolls (000)	% Dis.
Forestry, Fishing & Mining	371	4.7%	1,936	5.5%	530	5.2%	2,768	6.9%
Construction	374	4.8%	1,757	5.0%	401	3.6%	1,698	4.3%
Manufacturing	421	5.4%	974	2.8%	436	4.3%	1,009	2.5%
Trans., Comm. & Utilities	695	8.8%	3,494	9.9%	986	9.8%	4,956	12.4%
Finance, Insur- ance, Real Estate	342	4.4%	3,380	9.6%	302	3.0%	1,462	3.7%
Services	2,178	27.8%	6,410	18.1%	2,796	32.0%	9,524	23.9%
Government	1,730	22.1%	11,512	32.6%	1,875	18.5%	10,327	26.0%
Trade	<u>1,721</u>	<u>22.0%</u>	<u>5,824</u>	<u>16.5%</u>	<u>2,385</u>	<u>23.6%</u>	<u>8,097</u>	<u>20.3%</u>
Total	7,832		35,277		9,711		39,841	



MILO SMITH • ASSOCIATES, INC.

CHART I

# DISTRIBUTION OF EMPLOYMENT AND INCOME KEY WEST 1965



The most significant characteristic portrayed in this table is the inequality in the distribution of income. This is particularly evident in the Government and Services categories. The services grouping employs approximately 30 per cent of the Key West work force but pays only 20% of the total wages. Just the reverse is true with the government, which employs 20% of the work force and accounts for 25% of the income derived from wages and salaries. The other categories in Table 4 present much of the same types of differences though not as extreme as the two previously mentioned. Chart 1 graphically depicts income and employment and more clearly shows these differences between percentage income and percentage employment.

Income distribution is generally measured on the basis of the Lorenz Curve. Such a curve plots the percentage of people ranked from the poorest on up on the horizontal axis and the percentage of income they receive on the vertical axis. If we had total equality (i.e., all persons receiving the same amount of income) as expressed by the per capita statistics in Table 2, the resulting Lorenz Curve would be a straight line. As stated previously, absolute equality does not exist. Shown in Chart 2 is the Lorenz Curve for the total United States in 1959. The Lorenz Curve for Key West could be hypothesized to resemble closely the curve shown on Chart 2. In the past several decades there has been a trend towards greater equality in the curve (more resemblance to a straight line). There is no basis for anticipating any change in this trend during the next 15 years.

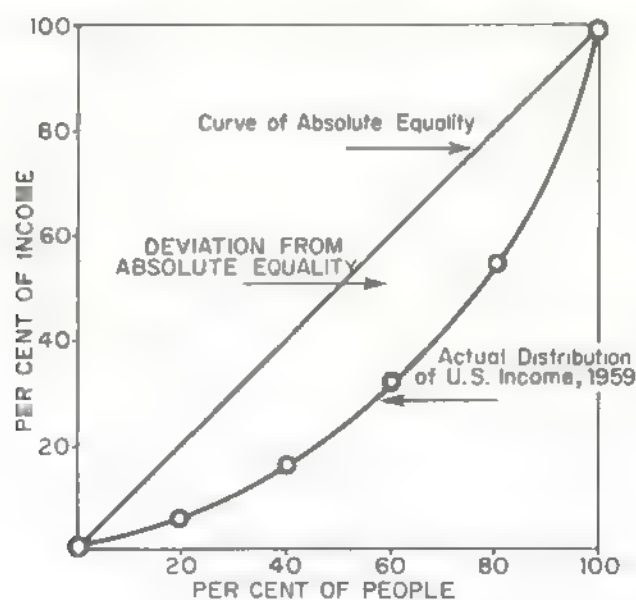


CHART 2  
DISTRIBUTION OF INCOME IN THE  
UNITED STATES 1959 (LORENZ CURVE)

## CHARACTERISTICS OF INDIVIDUAL SECTORS OF THE ECONOMY

This section of the study analyzes in greater depth the individual sectors of the Key West economy. Throughout this portion of the report two characteristics have generally been reviewed. First, the growth in the number of reporting units (individual establishments) has been tabulated to ascertain which sectors of the economy are growing. Secondly, the total sales in the different commodity lines have been recorded to provide us with valuable statistics by which the growth or stability of the various sectors can be analyzed.

### Retail Trade

The retail sector represents a portion of the economy which is primarily supported by the local resident population. However, due to the significant volume of tourists which come to Key West, certain portions of the retailing activity actually draws new money into the economy, and hence it is partially a basic industry.

Table 5 presents the first review of the retailing statistics by showing the number of establishments in Key West and the remainder of Monroe County from 1954 to 1963. This table shows that there has been a significant growth in the number of business establishments outside of Key West, but within the City the number of outlets has remained almost constant. In 1954, approximately 70 per cent of all retail establishments in Monroe County were located in Key West. During the ensuing ten-year period, this percentage has dropped and in 1963, Key West had less than 60 per cent of the retail establishments. A development of this nature is not unusual since in the United States there is presently a trend toward fewer but larger stores. Within the body of the table, the categories food stores and apparel shops typify this trend.

Table 6 presents statistics detailing the total sales volume by commodity line for stores in Key West and the remainder of the County. It is interesting to note that Key West continues to retain a greater percentage of sales than it does establishments. In 1954, when the City had 70% of the total establishments located within the County, they accounted for over 80% of the sales. The percentage of Key West sales to total County sales has declined to 75% in 1958, and 71% in 1963. This 71% of County sales is still a significant percentage when it is remembered that in 1963, Key West had approximately 60% of all retail establishments. The statistics in Table 6 serve to strengthen the hypothesis that there is a trend toward fewer but larger stores in existence today. For example, categories such as food stores and automotive dealers experienced an absolute decline in the number of establishments in Key West between 1954 and 1963. In spite of this reduction in absolute number of establishments, both categories experienced significant growth in their total volume of sales.



Table 5  
Number of Retail Establishments  
Key West and Monroe  
County\*

	1954		1958		1963		Increase	
	K.W.	Rem. Mon. Co.	K.W.	Rem. Mon. Co.	K.W.	Rem. Mon. Co.	K.W. 54-63	Mon.Co. 54-63
Lumber, Bldg. Material Hardware & Farm Equip.	12	5	15	12	11	10	-1	5
General Merchandise	9	6	12	10	10	4	1	-2
Food Stores	52	21	50	17	43	31	-9	10
Automotive Dealers	19	7	20	11	17	12	-2	5
Gasoline Service Stations	15	20	23	25	21	33	6	13
Apparel Accessory Shops	33	2	29	10	25	19	-8	17
Furniture, Home Furnishing Equip.	20	5	21	10	22	8	2	3
Eating & Drinking Places	98	56	87	70	96	61	-2	5
Drug Store Proprietary	12	4	11	8	17	4	5	0
Other Retail Stores	36	24	50	41	52	30	16	6
Non-Store Retailers	<u>11</u>	<u>0</u>	<u>12</u>	<u>4</u>	<u>9</u>	<u>11</u>	<u>-2</u>	<u>11</u>
TOTAL	317	150	330	218	323	223	6	73

\*Source: U. S. Census of Business Retail Trade, 1954, 1958, 1962.

Table 6  
Total Sales by Commodity Line (000)

	1954		1958		1963		Change 1954-63	
	Key West	Rem. Mon. Co.	Key West	Rem. Mon. Co.	Key West	Rem. Mon. Co.	Key West	Rem. Mon. Co.
Lumber, Bldg. Material Hardware & Farm Equip.	1,415	470	1,690	1,386	1,663	1,335	248	865
General Merchandise	1,709	194	1,829	623	3,013	501	1,304	307
Food Stores	7,200	1,210	10,897	1,825	10,232	4,998	3,032	3,788
Automotive Dealers	4,034	228	6,251	607	9,076	752	5,062	524
Gasoline Service Stations	1,525	1,316	1,844	1,741	2,278	2,097	753	781
Apparel Accessory Shops	**	**	2,691	329	2,235	572	**	**
Furniture, Home Furnishing Equip.	1,387	145	1,210	404	1,368	386	-19	241
Eating & Drinking Places	4,406	1,916	4,356	2,529	4,044	2,835	-362	919
Drug Store Proprietary	708	519	951	670	1,369	451	661	-68
Other Retail Stores	**	**	**	**	2,696	1,348	**	**
Non-Store Retailers	<u>377</u>	<u>0</u>	<u>**</u>	<u>**</u>	<u>1,157</u>	<u>858</u>	<u>780</u>	<u>858</u>
TOTAL ***	26,742	6,397	35,196	11,504	39,151	16,133	12,409	9,736

\* Source: U.S. Census of Business Retail Trade 1954, 1958, 1963.

\*\* Withheld to avoid disclosure.

\*\*\*Totals include individual categories for which disclosure prohibited detailing sales.

Further, to illustrate the point of greater sales per store, Table 7 combines the information presented in Tables 5 and 6 and serves to verify the soundness of the retail trade sector in the Key West economy.

Table 7  
Sales Per Establishment by Commodity Line\* (000)

	1954		1958		1963		Change 1954-63	
	<u>Key West</u>	<u>Rem. Mon.Co.</u>	<u>Key West</u>	<u>Rem. Mon.Co.</u>	<u>Key West</u>	<u>Rem. Mon.Co.</u>	<u>Key West</u>	<u>Rem. Mon.Co.</u>
Lumber, Bldg. Material Hardware & Farm Equip.	117.9	94.0	112.7	115.5	151.2	133.5	33.3	39.5
General Merchandise	189.9	32.3	152.4	62.3	301.3	125.2	111.4	92.9
Food Stores	138.5	57.6	217.9	107.3	237.9	161.2	99.4	103.6
Automotive Dealers	212.3	32.5	312.6	55.1	535.0	62.6	322.7	30.1
Gasoline Service Stations	101.7	65.8	80.2	69.6	108.9	63.5	7.2	-2.3
Apparel Accessory Shops	**	**	92.8	32.9	89.4	30.1	**	**
Furniture, Home Furnishing Equip.	69.3	29.0	57.6	40.4	62.2	48.2	-7.1	19.2
Eating & Drinking Places	44.9	34.2	50.1	36.1	42.1	46.4	-2.8	12.2
Drug Store Proprietary	59.0	129.7	86.4	83.7	80.5	112.7	21.5	-17.0
Other Retail Stores	**	**	**	**	51.8	44.9	**	**
Non-Store Retailers	<u>34.3</u>	<u>0</u>	<u>**</u>	<u>**</u>	<u>128.6</u>	<u>78.0</u>	<u>94.3</u>	<u>78.0</u>
TOTAL	84.3	42.6	106.6	52.7	121.2	72.3	36.9	29.7

\* Computed by Consultant from Tables 5 and 6.

\*\* Withheld to avoid disclosure.

All categories in Table 7 recorded increases in sales per store except for two categories which witnessed nominal declines. By looking at the final column of the table, it is possible to ascertain which elements of the retail sector are growing at the fastest rate. In Key West, food stores, automotive dealers, and general merchandise stores are those elements of the retail economy which possess the strongest growth characteristics.

The last comparison which should be made is to inspect how retail sales in Key West compare with total retail sales in the State of Florida. This comparison is made in Table 8.

Table 8  
Sales Per Capita for Key West & State of Florida in 1963

	Key West		Florida	
	<u>Sales (000)</u>	<u>Sales/Cap.*</u>	<u>Sales</u>	<u>Sales/Cap.**</u>
Lumber, Bldg. Material Hardware & Farm Equipment	1,663	43	333,848	60
General Merchandise	3,013	78	887,343	160
Food Stores	10,232	265	1,815,169	328
Automotive Dealers	9,096	235	1,618,141	292
Gasoline Service Stations	2,278	59	605,408	109
Apparel Accessory Shops	2,235	57	395,923	71
Furniture, Home Fur- nishing Equipment	1,368	35	357,647	64
Eating & Drinking Places	4,044	104	572,210	103
Drug Store Proprietary	1,369	35	286,460	51
Other Retail Stores	2,696	69	614,112	111
Non-Store Retailers	<u>1,157</u>	<u>29</u>	<u>123,384</u>	<u>22</u>
Total Per Capita Sales	39,151	1,014	7,609,345	1,375

\* Key West population was estimated at 38,600 in 1963.

\*\* Florida population was estimated at 5,531,000 in 1963.

Table 8 vividly shows that on a per capita basis the Key West area falls far behind the entire State of Florida. If an analysis had been made of the number of establishments per 1,000 residents, an identical pattern would have undoubtedly occurred. The low per capita sales in the Key West area can probably be attributed to two specific causes. First, because of the large number of military people in Key West, a sizeable amount of retail goods is sold through the base commissaries. Sales made on military reservations such as the one located in Key West are not included in the retail sales statistics presented above. Table 9 shows the volume of sales made at military commissaries located in Monroe County during 1963.

Table 9  
Retail Sales of Military Bases in Monroe County in 1963\*

	Sales (000)
Commissaries	\$ 2,651
Exchanges	\$ 4,419
Eating & Drinking Places	\$ <u>644</u>
Total	\$ 7,714

\*Source: U. S. Census of Business Retail Trade, 1963.

As Table 9 shows, there was almost eight million dollars in sales made on military bases in Monroe County in 1963. Unfortunately, there was no way to determine what percentage of these sales were in the Key West area; however, for practical purposes it could be hypothesized that almost all of these sales were transacted there. One can readily imagine how much sales per capita would have risen had it been spent in the private sector of the retail economy.

The second reason for the low sales per capita is no doubt again related to the military sector of the economy. Because of the highly transient nature of the population, the people would not be making substantial investments in home furnishings and other types of retail goods. It is interesting to note that only one category comes close to the overall state per capita sales figure. This category, eating and drinking places, is another strong indicator as to the volume of money brought into the Key West area economy by the tourists, and hence would be considered one of the City's basic industries.



### Service Activities and Tourism

The service sector in the Key West area should be considered a basic portion of the economy since it results in bringing in new money into the economy as against the retail trade sector, with the exception of eating and drinking places, which only recirculates the money presently existing within the City. The methodology used in this part of the report was similar to that employed in the previous section with an examination of the number of establishments and the volume of sales of these establishments.

Table 10 presents the first information on the service sector of the economy by showing the number of establishments in the Key West Planning Area in 1963, and the remainder of the County between 1954 and 1963.

Due to the unavailability of statistics pertaining to the Key West area earlier than 1963, the majority of analysis in this section is limited to the conditions as they existed in 1963. The table shows that there has been a constant growth in the number of service establishments during the ten-year period of 1954-1963. It could be hypothesized that the Key West Planning Area exhibited a similar pattern in service establishments as it did in retail trade establishments with a gradually decreasing percentage of the total number of establishments.

Two categories of the table show unexpected peculiarities. These were: hotels, motels, tourist courts and amusements. As the table shows Key West only had approximately one-third of the Monroe County total establishments in each of these two categories. It can be reasoned, however, that this occurrence is a result of the fact that the other portions of the Keys up to the Florida mainland have an economic base solely dependent on tourism; whereas, Key West has a diversity of other economic factors which also assist in maintaining the populous at a desirable level.

Once again it can be seen that the per capita sales in the service sector of the economy is much below the overall state per capita figures. The only exception to this statement is the tourist oriented category of hotels, motels and tourist courts. This below average per capita sales figure can again be attributed to the presence of the military base in Key West and their supplying many of the services offered by the private market.

Table 10  
Number of Service Establishments

	1954**	1958**	1963			Change 1954-63
	<u>Monroe County</u>	<u>Monroe County</u>	<u>Key West</u>	<u>Rem. Monroe County</u>	<u>Total County</u>	<u>Monroe County</u>
Hotels, Motels, Tourist Courts	122	181	53	138	191	69
Personal Services	68	65	64	38	102	34
Laundry & Dry Cleaning	(17)	(10)	(12)	(9)	(21)	(4)
Beauty Shops	(11)	(22)	(19)	(14)	(33)	(22)
Barber Shops	(18)	(17)	(19)	(12)	(31)	(13)
Other	(22)	(16)	(14)	(3)	(17)	(-5)
Business Services	10	26	23	9	32	22
Auto Repair, Garages	20	29	22	14	36	16
Misc. Repair Services	30	33	15	25	40	10
Motion Pictures	5	7	2	2	4	-1
Amusement Other than Motion Pictures	<u>67</u>	<u>85</u>	<u>35</u>	<u>105</u>	<u>140</u>	<u>73</u>
TOTAL	322	426	214	331	545	223

\* Source: U. S. Census of Business Selected Services, 1954, 1958, 1963.

\*\* Unable to make split between Key West and remainder of Monroe County.

Table 11  
Sales and Sales Per Capita in Key West and State of Florida in 1963\*

	Key West		Florida	
	<u>Sales</u> <u>(000)</u>	<u>Sales/</u> <u>Capita</u>	<u>Sales</u> <u>(000)</u>	<u>Sales/</u> <u>Capita</u>
Hotels, Motels, Tourist Courts	\$2,748	\$ 71	\$ 383,811	\$ 69
Personal Services	\$1,161	\$ 30	\$ 274,387	\$ 49
Laundry & Dry Cleaning	\$ (602)	\$ (15)	\$ (132,508)	\$ (23)
Beauty Shops	\$ (196)	\$ (5)	\$ (52,134)	\$ (9)
Barber Shops	\$ (188)	\$ (4)	\$ (26,794)	\$ (4)
Other	\$ (175)	\$ (4)	\$ (63,072)	\$ (11)
Business Services	\$ 275	\$ 7	\$ 312,143	\$ 56
Auto Repair, Garages	**	**	\$ 180,735	\$ 32
Misc. Repair Services	\$ 209	\$ 5	\$ 126,971	\$ 22
Motion Pictures	**	**	\$ 45,624	\$ 8
Amusement Other than Motion Pictures	\$ <u>260</u>	\$ <u>6</u>	\$ <u>168,402</u>	\$ <u>30</u>
TOTAL	\$5,348	\$138	\$1,492,073	\$269

\* Source: U.S. Census of Business Selected Services, 1963.

\*\* Withheld to avoid disclosure.

Table 12  
Motels and Hotels in Key West and Monroe County\*

	Hotels		Motels	
	<u>Number Hotels</u>	<u>Number Rooms</u>	<u>Number Motels</u>	<u>Number Rooms</u>
1955 Monroe County	14	773	157	2,736
Key West	5	296	60	1,050
1960 Monroe County	6	537	153	2,737
Key West	2	206	58	1,050
1963 Monroe County	10	645	182	3,059
Key West	4	247	70	1,175
1966 Monroe County	5	353	170	3,229
Key West	2	135	65	1,239

\* Source: Florida Hotel and Restaurant Commission.

The Florida Hotel and Restaurant Commission publishes reports detailing the total number of establishments and the number of motel and hotel rooms on a county by county basis. This information gave no indication of what percentage of the Monroe County total was situated within the Key West Planning Area. In order to obtain some indication of the total within the Key West area, a straight percentage of 38.4 was used. This figure was derived from the information contained in Table 10.

In addition to discussing the desirability of attracting tourists to the Key West area, it must also be mentioned that there are certain undesirable side effects. The most noticeable problem is the distinct seasonality of the tourist trade and the associated employment problems this creates. Chart 3 depicts this problem graphically by showing the total amount of covered employment by months for the years 1960, 1963, and 1965 in the service industry. As the chart shows, there is a distinct monthly employment pattern that pervades all three years. Although the chart only shows covered employment, it could be hypothesized that an identical employment pattern exists for the uncovered portion of the labor force employed in the service industries. This means that if the City wants to attract and maintain a desirable labor force, an effort must be exerted to insure that persons laid-off during the slack part of the tourist season can find suitable employment in other sectors of the economy.

### Military Sector\*

Section one of this report showed the importance of the civilian governmental employees in that they received approximately one-third of the total wages and salaries distributed to the private sector of the labor force. This section of the report shows the predominant effect that the Armed Forces has on the economy of the Key West area. Table 13 illustrates the make-up of the civilian work force in terms of workers per thousand population.

Table 13  
Workers per 1,000 Population\*

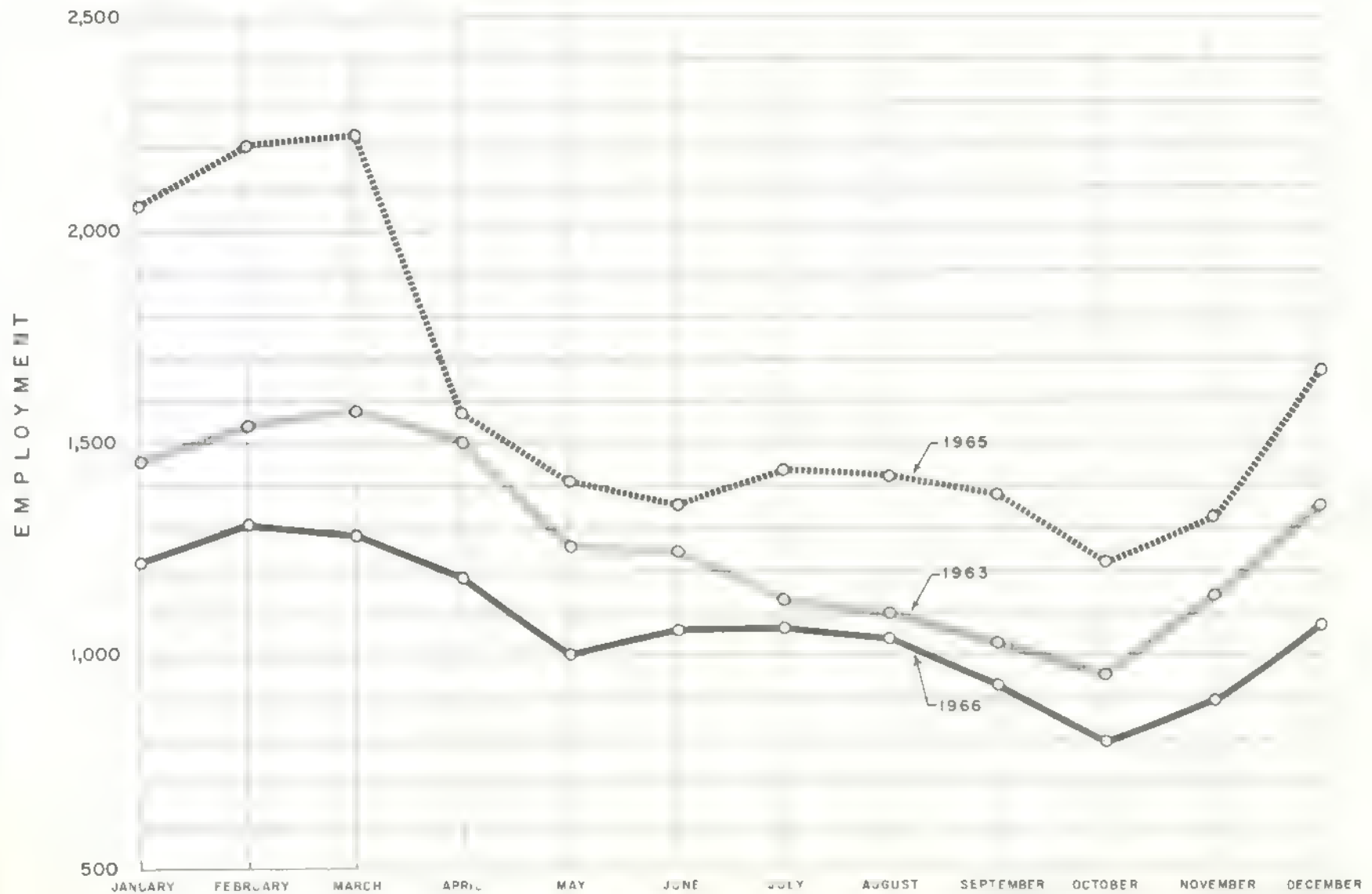
	<u>1960</u>	<u>Key West 1950</u>	<u>1940</u>	<u>Florida 1960</u>
Forest and Fish	8.9	9.1	11.2	1.4
Construction	10.0	15.8	22.7	31.7
Manufacturing	11.3	7.7	14.7	45.4
Trans., Com. & Utilities	18.6	13.2	22.3	24.5
Trade	46.0	48.7	53.9	75.8
Finance, Insurance, Real Estate	9.2	5.0	5.2	18.4
Services	58.2	47.0	73.0	89.6
Public Administration	46.2	53.7	52.2	18.1
Other	<u>21.4</u>	<u>5.0</u>	<u>3.0</u>	<u>18.6</u>
Total Civilian Work Force	230.7	205.5	260.1	347.2
Total Work Force (Civilian and Military)	435.0			362.7

\*Source: U.S. Census of Population, 1940, 1950, 1960.

With the exception of the fishing and public administration categories, Table 13 shows that all sectors of the civilian labor force in Key West are far below the ratio in existence for the entire State. But, when the Armed Forces sector is added to the civilian sector, the worker per population ratio in Key West clearly exceeds that of the entire State. The governmental sector of the economy, both civilian and Armed Forces, is definitely a basic industry. It obtains this classification because it brings money in from outside the Key West



CHART 3  
COVERED EMPLOYMENT IN SERVICE SECTOR





area for work performed in Key West. When reviewing the income statistics presented below, it should be remembered that only a portion of the total wages and salaries paid to the Armed Forces reach the local economy. Because of the presence of the military commissaries, previously discussed, a certain proportion of the military salaries is cycled back through governmental channels without reaching the Key West economy.

The most recent estimate available states that there are 9,498 military personnel stationed in the Key West area. The distribution of this personnel is as follows:

Naval Station	4,122
Naval Station	1,363
Naval Air Station	2,990
Naval Air Station Annex	643
Commissary	37
Naval Hospital	171
Coast Guard	132
	<hr/>
	9,458

Of this total of 9,458 personnel in the Key West area, those stationed at the Naval Air Station and the Naval Air Station Annex are outside the Key West Planning Area. This would mean that there are 5,825 men stationed within the planning area.

Of more importance to the present study is the distribution of the personnel, i.e., whether they live on or off base. Presented below is the most accurate information concerning this subject:

	<u>Military Personnel</u>	<u>Dependents</u>
Living On Base	1,700	4,500
	5,720 (single)	
Living Off Base	<u>2,038</u>	<u>5,500</u>
	9,458	10,000

Of the number that live off base approximately 400 dependents and 170 military personnel live outside the planning area on Big Coppitt Key. This means that in addition to the permanent Key West resident population, the local housing market is supplying homes for approximately 1,870 military families. It has been estimated that the families living off the base but in the Key West Planning Area are distributed in approximately the following manner:

	<u>Personnel</u>	<u>Dependents</u>
City	1,280	3,400
Stock Island	440	1,200
Other Areas Around City	150	400

The other important factor concerning the military is the money it brings into the local economy. The Bureau of Economic and Business Research at the University of Florida estimated that in 1964, Monroe County had a total of \$50,286,000 in Armed Forces payroll. If we assume this money is split in the identical manner as the personnel, it would mean that the City receives approximately \$31,000,000 from the Armed Forces. When this figure is added to the estimated \$39,000,000 civilian wage and salary income in 1965, it means that the City accounts for approximately \$70,000,000 in wages and salaries.

A check on the reasonableness of the 1965 income estimates was performed by prorating the Armed Forces income estimates to the 6,939 people enumerated by the 1960 Census of Population as being in the service. This resulted in an estimate of \$36,925,000 being paid to Key West military personnel. When this total was added to our estimate of 1960 civilian wages and salaries of \$35,277,000, it resulted in being 73% of the total wage and salary income in Monroe County as estimated by the Bureau of Economic and Business Research in Table 1 of this report. This statistic serves to verify the accuracy of our 1965 income estimates.

The other portion of the government sector of the economy (civilian governmental employees) is presently estimated to contain a total work force of 1,950 employees. The breakdown of this total figure is that there are 250 non-civil service employees that work either at the exchange on the Naval Base or at the Commissary on Simonton Street in Key West. The other 1,400 workers are civil service employees. Two hundred and twenty-five of these workers are employed at the Naval Air Station at Boca Chica Key. The remaining 1,475 are employed in Key West, with 75 stationed at the Naval Ordinance Annex and the remaining 1,400 working at the Naval Station. The statistics presented in this section of the report give ample evidence of the primary significance the government has over the total economy.

### Local Housing Market

In light of the growth which has occurred in the percentage of employment in the construction category and the volume of homes which are being supplied in military personnel in the Key West area, it is necessary to undertake a study of the local housing market situation. This investigation will analyze the condition of the housing as it appeared in 1960, plus a description of the building permit activity which has occurred since that time.

The Census of Housing reported that in 1960, there were 10,190 housing units, of which 9,110 were being occupied. This means that in 1960, there was a vacancy ratio of approximately 10% in the City. A vacancy percentage of this volume is considered to be close to a normal ratio. In comparison, the entire State had a vacancy ratio of almost 13%.

Of more importance is the present condition of the housing. Presented on the following page are the statistics detailing the conditions as they existed in 1960.

Table 14  
Key West Housing Conditions\*

	<u>Absolute</u>	<u>%</u>
<u>Total Units</u>	10,190	
Sound	8,528	83.7%
With Plumbing Facilities	7,553	74.1%
Lacking Hot Water	739	7.3%
Lacking Other Plumbing Facilities	236	2.3%
Deteriorating	1,035	10.2%
With Plumbing Facilities	541	5.3%
Lacking Hot Water	341	3.4%
Lacking Other Plumbing Facilities	153	1.5%
Dilapidated	627	6.1%

\*Source: U.S. Census of Housing, 1960.

Table 14 gives us an indication of the poor condition of the existing housing units. By American Public Health Association standards, a housing unit must have all the proper plumbing facilities before it can be classified as a sound housing unit. If such a requirement were imposed on the Key West housing units, Table 14 shows that less than 75% could be considered as being sound.

It is possible to cite additional statistics indicating the overall poor condition of the Key West housing supply. For example, the median number of rooms in all housing units is 4.2, whereas the overall state average is 4.6. Also of the 9,110 occupied housing units, 1,460 or 16%, have greater than 1.0 persons per room, which is considered overcrowded conditions according to American Public Health Association standards.

The immense impact of the Navy upon the local housing market can be seen by reviewing the statistics pertaining to the ratio of owner occupied against renter occupied dwellings. Table 15 presents this information and compares it to the State totals.

Table 15  
Ratio of Renter Occupied Against Owner Occupied Housing\*

	Key West		Florida
	<u>Absolute</u>	<u>Per Cent</u>	<u>Per Cent</u>
Owner Occupied	3,469	38.1%	67.5%
Renter Occupied	<u>5,641</u>	61.9%	32.5%
Total	9,110		

\*Source: U.S. Census of Housing, 1960.

Table 16 traces the building permit activity which has occurred between 1961 and 1964. As the table shows, there has been an upward trend in the number of building permits issued during the time period.

Table 16  
Building Permit Activity in Key West\*

	Residential		Commercial	
	<u>Number</u>	<u>Value</u>	<u>Number</u>	<u>Value</u>
1961	49	\$ 470,200	13	\$442,039
1962	56	\$ 607,875	11	\$ 94,350
1963	54	\$ 659,500	8	\$188,840
1964 - January thru August	<u>69</u>	<u>\$ 760,680</u>	<u>9</u>	<u>\$197,583</u>
Total	228	\$2,498,255	41	\$922,811

\*Source: Building Inspector, Key West.



A breakdown of the 228 permits issued in the Key West area shows that 218 were issued for single-family units and the remaining 10 were issued for duplex or multi-family structures. It is interesting to note that during the nine-month period of January to August, 1964, there were more residential permits issued with a greater dollar value than during any one of the past three calendar years. This supplies us with an indication that the construction sector will continue to be a viable portion of the total Key West economy.

### Fishing Industry

The fishing industry has had a spotted history in the Key West area. It initially became a prominent factor around 1850 when sponges were first commercially gathered. The peak year in sponge production in the Key West area was in 1902. Since that time, however, the sponge industry has slowly migrated away from Key West until today it is non-existent in the area. The present economic interest in the fishing industry came from the discovery of shrimp off Dry Tortugas, about 65 miles west of Key West.

The present shrimp fleet consists principally of migratory boats basing at Key West Bight, Safe Harbor and Marathon during the Tortugas season, which is generally November through May. Seasonal boats of the Key West area fleet come from as far north as the Carolinas and as far west as Texas. The impact which the shrimping industry has had on the Key West economy can be seen more clearly in Table 17, which relates the number of shrimp boats in the Key West harbor by months.

By showing the monthly averages (column 5) and showing the two total averages for on and off seasons, we can vividly see the seasonality of the shrimping industry. The seasonality problem of the fishing industry is not nearly as severe as that posed by the service trade industry previously discussed. This is because of the fishing boats are migratory in nature and hence return to their home port during the "off" portion of the shrimping year.

The major port for the commercial fishing boats is Key West Bight, which is located at the northwest end of the island. The facilities available at the Bight include five shrimp and commercial fishing boat terminals, two barge terminals, one marine railway, one marine salvage yard and one fueling and icing terminal. It has been reported that as many as 350 shrimp boats berth in the Bight during bad weather on the Tortugas grounds.

Table 17  
Shrimp Boats in Key West by Months 1956-59\*

	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>Average</u>
January	265	297	431	400	348
February	270	231	425	500	357
March	282	315	435	540	393
April	295	290	450	260	324
May	260	279	420	175	284
June	191	187	230	160	192
July	**	114	75	30	73
August	**	74	125	30	76
September	**	88	250	25	121
October	**	160	275	42	159
November	235	250	350	175	253
December	240	285	450	225	300

\* Source: U.S. Fish and Wildlife Service.

\*\* Not Available.

Table 18 lists the value of all fishery production for Monroe County. There is no reliable manner in which this can be split between Key West and the remainder of the county, but it is estimated that a great majority of the total catch is landed at Key West.

During the first six months of 1964, the U.S. Department of Interior reports 12,587,122 pounds of fish unloaded in Monroe County, compared with 11,343,685 pounds during the comparable period in 1963, an increase of 11% over 1963. This indicates that the fishing industry is going to continue to remain a vital segment of the Key West economy.

Table 18  
Fish Landings in Monroe County\*

	1962		1963	
	<u>Pounds</u>	<u>Value</u>	<u>Pounds</u>	<u>Value</u>
Food Fish	7,589,521	\$1,085,414	7,049,238	\$ 907,630
Non-Food Fish	54,389	\$ 6,678	85,070	\$ 12,324
Shellfish	2,721,763	\$1,055,645	3,033,921	\$1,218,829
Shrimp	<u>10,595,265</u>	<u>\$4,126,188</u>	<u>12,933,462</u>	<u>\$3,736,375</u>
Total	20,960,938	\$6,273,925	23,101,691	\$5,875,158

\*Source: U.S. Department of Interior, Fish and Wildlife Service.

## GROWTH POTENTIAL OF THE KEY WEST ECONOMY

The two previous sections of this report have presented the overall characteristics of the Key West economy and a detailed review of its most significant sectors. The final section will analyze and forecast the potential growth that can be expected in the Key West area. This portion of the report has been divided into two sections. First, the overall characteristics of the area will be reviewed to evaluate those factors which would tend to encourage growth in Key West. Secondly, on the basis of section two of this report, estimates will be presented as to the growth potential of each sector previously discussed.

### Key West Resources

Due to its location, the City of Key West faces many atypical problems. However, by identifying them it is possible to seek alternatives which could do the most toward minimizing those problems.

Key West's geographic location, its complete severance from the Florida mainland, creates many difficulties for the local economy. First, there is no hinterland to which the local merchants can depend on for trade. All their business must come from within the City limits or from tourists. As was shown in the previous section, this has caused sales and establishments to fall far below the overall State average. Secondly, its location handicaps the island as far as manufacturing is concerned. The higher cost of transportation associated with the distribution of final products places Key West at a disadvantage in a competitive bidding situation with other Florida communities.

The other major growth deterrent is the limited amount of potable water in the Key West area. All potable water in Key West arrives from the Florida mainland through an 18-inch pipeline constructed in 1957. A study conducted in 1964 indicated the present consumption rate was 80 gallons per day per capita.\* Included in this figure is a 10% allowance for line losses. The figure on per capita consumption is extremely low due to the high cost of the water. This lack of adequate and inexpensive fresh water must be viewed as a hinderance to urban development in the Key West area.

Conversely, Key West possesses other characteristics which tend to encourage growth. The climatic conditions will continue to attract retired people seeking an area which possesses only nominal fluctuations in its yearly temperatures.

The City also has the unique potential of controlling and directing urban development. The physiographic study completed by this Consultant reached the conclusion that there were adequate amounts of fill available surrounding the Key West area. Through judicious use of its potential, the City has the ability to shape an urban pattern that will become a permanent asset.\*\*

\* Burns & Roe, Inc., Feasibility Study of A Dual Purpose Reactor Power Plant for the Florida Keys.

\*\* For more detailed discussion of this point see: Physiographic and Hydrographic Characteristics of the Key West Planning Area: A Survey and Analysis of Their Influences on Urban Development.

### Projection of the Key West Economy

Over the past several decades, Key West has been developing a unique economic base, supported primarily by the Armed Forces and civilian military employees, tourism and fishing. From the previous analysis it could be concluded that the Key West area is on the verge of a transition into a new type of growth. The major element of this transition will involve a continually decreasing dependence on the military operations in the area. It is not to say, however, that the military will become an unimportant segment of the economy, but it will remain in a more or less status quo position in comparison to other sectors of the economy.

To illustrate this point further, Table 19 presents information showing the percentage breakdown of the civilian work force in comparison to the Key West total population. The table shows that there has been a trend toward a larger percentage of the total population being employed in the civilian work force.

Table 19  
Population and Employment in Key West

	<u>1950*</u>	<u>%</u>	<u>1960*</u>	<u>%</u>	<u>1965**</u>	<u>%</u>
Total Population	26,433		33,956		38,500	
Total Civilian Emp.	5,433	20.55%	7,832	23.06%	9,711	25.22%
Forestry, Fishing, Mining	521	.94%	371	1.09%	530	1.37%
Construction	435	1.64%	374	1.10%	401	1.04%
Manufacturing	212	.80%	421	1.23%	436	1.13%
Trans., Comm., & Utilities	368	1.39%	695	2.04%	986	2.56%
Trade	1,328	5.02%	1,721	5.06%	2,385	6.19%
Finance, Insurance, Real Estate	136	.51%	342	1.00%	302	.78%
Services	1,282	4.84%	2,178	6.41%	2,796	7.26%
Government	1,420	5.37%	1,730	5.09%	1,875	4.87%

\* Source: U.S. Census of Population, 1950, 1960.

\*\* Computed by Consultant (see Appendix).



On the basis of the past analysis of the Key West area and an approximation of what presently exists, the last procedure is to forecast the probable developments that can be expected to occur in the future. At the outset, it is important to recognize that there are specific limitations associated with quantitative projections. There exists no way to anticipate with unerring accuracy the employment patterns of new enterprises in the local economy. It is quite possible that a single new plant might bring in a work force larger than could be anticipated in any statistical projection. The beneficial part of a statistical projection is to approximate, with reasonable accuracy, relationships between broad sectors of the economy.

The economic projections set forth were not derived from simple statistical formulas, although large amounts of economic data were analyzed. The projections involved evaluations of Key West's resources and problems and from these the development of the probable directions and dimensions of growth that will take place.

In developing these projections, it was considered most desirable to present the forecasts in the form of ratios. The ratios were formulated on the basis of gain in employment by sector versus total gain in population. The ratios developed for Key West are presented below in Table 20.

Table 20  
Ratios Between Wage and Salary Employment and Population  
Growth in Key West

Forestry, Fishing and Mining	.80
Manufacturing	.52
Transportation, Communications, and Utilities	1.72
Construction	1.94
Trade	2.00
Finance, Insurance, Real Estate	3.09
Services	2.08
Government	1.70

The following assumptions were made in deriving these estimates:

1. Armed Forces and Federal civil service workers would remain at their present level of employment.
2. The number of tourists visiting Key West will remain a constant proportion of total tourists visiting Florida and double in the next 20 years.



3. All types of industries having high water using requirements, or large amounts of land, will locate elsewhere than Key West.
4. The cross Florida Canal, presently under construction, will cause the Key West shipping port to decrease in importance.

In addition to these four basic assumptions, the ratios were based on the following reasoning for each of the individual sectors.

1. Forestry, Fishing and Mining. Although fishing will continue to be of primary importance in the total economy, it will witness only marginal gains in total employment. This is anticipated primarily due to the technological innovations that will occur in the industry. Secondly, due to the seasonality of the shrimping in the Tortugas, any major increase could result from additional migrant boats coming to Key West for the shrimping season and then returning to their home ports.
2. Manufacturing. Due to a lack of transportation facilities and limited amounts of buildable land area in Key West, this sector will receive only nominal gains. Types of industries that could possibly be attracted to Key West are boat building and repair facilities.
3. Construction. This sector will increase at a rate faster than the total population primarily as a result of anticipated increases in per capita incomes. In addition, major public works projects presently needed by the City will be undertaken during the projection period. Increasing amounts of bay fill activity will also be a factor in the increasing employment in the construction sector.
4. Transportation, Communications and Utilities. This category will see a steady increase resulting primarily from major projects that must be undertaken in the Key West area, such as sewer improvements and a water desalinization plant. The most significant gains in the transportation field will mainly be in port related activities. Increasing usage of automated handling devices will possibly reduce labor per ton of cargo, but the increasing importance of the fishing industry will have the net effect of increasing total employment.
5. Wholesale and Retail Trade. This and the following consumer oriented employment categories will record the most noticeable gains in total employment. This is mainly a result of the fact that as a larger percentage of the total population becomes non-militarily oriented an increasing number of stores will be needed to service this population. The wholesaling portion of this category will only receive nominal increases in total employment during the next 20 years and has tended to lower the total growth ratio presented.

6. Finance, Insurance and Real Estate. The high growth forecasted for this sector is primarily a result of the fact that Key West is understaffed in this type of activity, as shown in Table 13. This, coupled with the fact that the area can support these more specialized activities as its total population increases, justifies the large increase in employment predicted.
7. Services. The major increases in this category will result from the continued increases in tourist related activities. The classifications hotels, motels, amusements, and automotive will witness the largest increase in this category. Business and personal services will increase as a result of the larger portion of the population having a non-military orientation.
8. Government. The only increases in this portion of the economy will be from additions to the local governmental staff. The Federal civil service workers will remain at or near their present level of employment for the next 20 years. The addition of such facilities as the junior college and increased staffing of the hospital tend to verify the validity of this estimate.

## APPENDIX A

### Methodology for the Allocation of Employment Between Key West Planning Area and the Remainder of Monroe County

Inherent in this study was the requirement that in addition to determining the size and make-up of the Key West labor force, the respective income attributable to each sector of the Key West economy must also be determined. This requirement made it mandatory to use the Florida Industrial Commission's Reports on Covered Employment and Payrolls along with the Census documents. The procedure employed was to derive estimates as to what percentage of the total Monroe County covered employment was attributable to the Key West area. This was done using November, 1963 as a bench mark. Chart 4 on the following page shows the reason why November was the month chosen for this comparison. Due to the fact that the covered employment was being compared to total employment as reported in the Census of Population, it was necessary to choose a month that closely resembled what was recorded in the Census. It would have been most desirable to use April, the month in which the Census was recorded, but the Industrial Commission was only able to supply the Consultant with covered employment figures within Key West for the last three months in 1963. As Chart 4 shows, November is the month that most closely typifies April and also is close to the overall yearly average of covered employment. Hence, it was the most logical choice.

Table 1a

#### November, 1963 Covered Employment\*

	<u>Monroe County</u>	<u>Key West Planning Area</u>	<u>% of Total</u>
Forestry, Fishing, and Mining	185	121	65.4%
Construction	544	210	38.6%
Manufacturing	551	482	87.5%
Transportation, Communications, and Utilities	453	327	72.2%
Trade	1,835	1,263	68.8%
Finance, Insurance, and Real Estate	291	247	84.9%
Services	1,097	405	36.9%
Government	<u>2,109</u>	<u>2,090</u>	<u>99.1%</u>
Total	7,065	5,145	72.8%

\*Source: Florida Industrial Commission.

The table on the preceding page gives us the conversion factors (column 3) by which total Monroe County covered employment figures can be split between the Key West Planning Area and the remainder of the county.

The next procedure was to perform the identical operation on the wages paid to the covered employment.

Table 2a

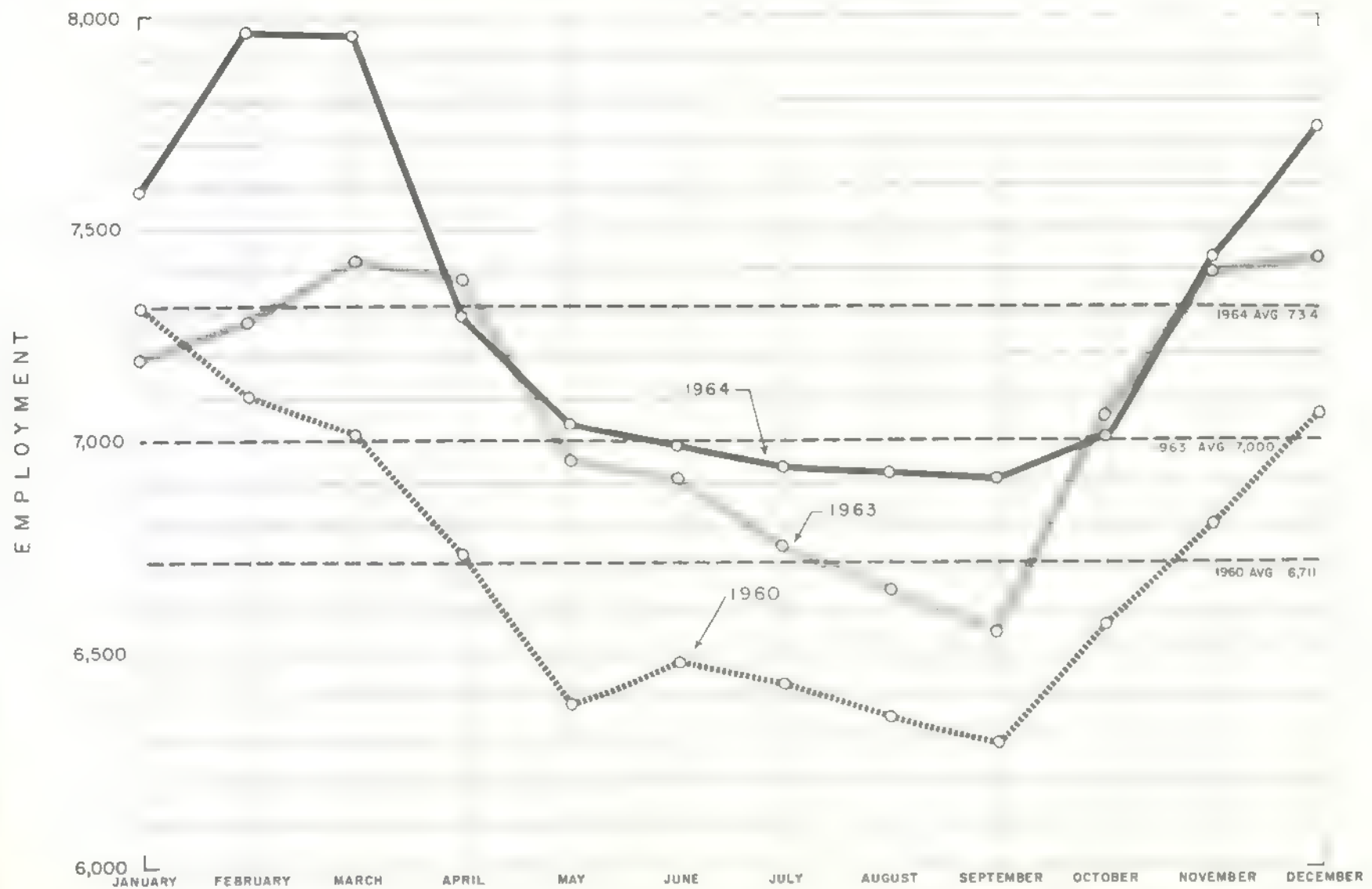
Total Wages Fourth Quarter 1963 Covered Employment\*

	<u>Monroe County</u>	<u>Key West Planning Area</u>	<u>% of Total</u>
Forestry, Fishing and Mining	\$ 251,333	\$ 158,756	63.2%
Construction	\$ 636,194	\$ 247,782	38.9%
Manufacturing	\$ 350,600	\$ 279,625	79.7%
Transportation, Communications, and Utilities	\$ 549,843	\$ 411,020	74.5%
Trade	\$1,501,430	\$1,072,262	71.4%
Finance, Insurance, and Real Estate	\$ 355,062	\$ 299,289	84.3%
Services	\$ 861,870	\$ 298,646	34.6%
Government	<u>\$2,892,736</u>	<u>\$2,878,557</u>	<u>99.5%</u>
Total	\$7,399,068	\$5,645,937	76.3%

\*Source: Florida Industrial Commission.

The above table gives us the conversion factors (column 3) by which the total Monroe County covered employment payrolls can be split between the Planning Area and the remainder of the county. When comparing these two tables, it is noticed that the Key West Planning Area has a slightly higher percentage of income than it does employment (76.3% vs. 72.8%). This indicates that employers in Key West pay slightly higher wages than do employers in other parts of the county. By looking at the internal portions of the two tables it is possible to determine which sectors of the economy pay higher or lower wages in Key West than in the remainder of the county.

CHART 4  
TOTAL COVERED EMPLOYMENT BY MONTH







Since covered employment only represents a portion of the total employment in any specific area, it next becomes necessary to compare the totals derived in Table 1a, to total employment as reported in the Census of Population. This is done in Table 3a below.

Table 3a

Conversion Factors to Adjust Covered Employment to Total Employment

	<u>Key West, March 1960 Covered*</u>	<u>1960 Key West Employment**</u>	<u>Conversion Factors</u>
Forestry, Mining and Fishing	98	371	26.4
Construction	344	374	91.8
Manufacturing	400	421	95.0
Transportation, Communications, and Utilities	265	695	38.0
Trade	1,311	1,721	76.2
Finance, Insurance, and Real Estate	328	342	95.9
Services	330	2,178	15.2
Government	<u>1,730</u>	<u>1,730</u>	<u>100.0</u>
Total	4,806	7,832	61.4

\* Derived from Table 2 and Florida Industrial Commission, Florida Employment & Payrolls, 1960.

\*\* Census of Population, 1960; the 726 workers listed in the Census as not reporting any industry were distributed according to percentage totals.

By using conversion factors presented in Table 3a, we now possess the ability to prepare two separate estimates. First, in conjunction with Table 2a, we can approximate the wages paid to workers in the Key West area in 1960. Secondly, by using Florida Industrial Commission Reports, we can update the employment statistics (both covered and uncovered) to 1965. By doing this, we possess more accurate information upon which to base the employment projections. These two procedures have been performed and are presented in Tables 4a and 5a.

Table 4a

Total Wages and Salaries Paid to Key West Residents in  
1960

	<u>Key West Employment</u>	<u>Total Salaries (000)</u>	<u>% Distribution</u>
Forestry, Fishing, and Mining	371	\$ 1,936.6	5.5%
Construction	374	\$ 1,757.6	5.0%
Manufacturing	421	\$ 974.8	2.8%
Transportation, Communications, and Utilities	695	\$ 3,494.0	9.9%
Trade	1,721	\$ 5,824.8	16.5%
Finance, Insurance, and Real Estate	342	\$ 3,380.4	9.6%
Services	2,178	\$ 6,410.0	18.1%
Government (civilian)	<u>1,730</u>	<u>\$11,512.0</u>	<u>32.6%</u>
Total	7,832	\$35,290.2	

\*Computed by extrapolation.

The totals presented in Table 4a compare favorably with the estimates prepared by the Bureau of Economic and Business Research presented in Table 3 of the text. The total (\$35,280,000) represents 75.2% of the total estimated wage and salary income in Monroe County in 1960, as presented in the text. The final check on the accuracy of the estimates presented in Table 4a was to compare our estimate of \$35,290,200 total civilian income against the total income figure presented in Table 76 of the Census of Population. The Census reported there were 7,783 families in Key West, and they possessed a median income of \$4,736. When multiplied together, we obtain a figure of \$35,860,288. This represents an error factor of approximately 4%, which is quite negligible.

Table 5a

Total Employment and Wages and Salaries Paid to Key West  
Residents in 1965

	November, 1965 Covered Employ- ment* Monroe County	Key West Planning Area Covered Employment**	Key West Planning Area Total Employment***	Key West Planning Area Wages and Salaries
Forestry, Fishing, and Mining	214	140	530	2,768.0
Construction	860	332	401	1,698.4
Manufacturing	475	415	436	1,009.2
Transportation, Communica- tions, and Utilities	519	375	986	4,956.8
Trade	2,642	1,818	2,385	8,097.2
Finance, Insurance, and Real Estate	342	290	302	1,462.0
Services	1,335	492	2,796	9,524.0
Government (Civilian)	<u>1,892</u>	<u>1,875</u>	<u>1,875</u>	<u>10,327.6</u>
Total	8,279	5,737	9,711	39,843.2

\* Source: Florida Industrial Commission, Florida Employment and Payrolls, 1965.

\*\* Computed by Consultant from Table 1a.

\*\*\* Computed by Consultant from Table 3a.

\*\*\*\* Computed by Consultant from Table 2a.

Unfortunately, the estimates presented in Table 5a are less susceptible to accuracy checks than were the statistics presented in Table 4a. However, there is one check that can be performed in Table 6a below.

Table 6a

Ratio of Key West Employment to Monroe County Population

	<u>Monroe County Population*</u>	<u>Key West Employment</u>	<u>Per Cent</u>
1960	47,900	7,832	16.3%
1965	59,500	9,711	16.9%

\*Estimates prepared by Bureau of Economic and Business Research, University of Florida.

Table 6a indicates that the estimates presented in Table 5a are quite reasonable and that they are likely to be very close to what presently exists in the Key West Planning Area.

## NEIGHBORHOOD ANALYSIS

Neighborhood Analysis comprises an essential element in the Key West comprehensive planning program. Through identification and examination of the community's neighborhoods and major non-neighborhood residential areas according to accepted planning principles, a synopsis of neighborhood problems and definite plan of action to solve such problems are organized. The extent and nature of blight and potential blight and the probable causes and contributing factors of the malady are outlined on a neighborhood by neighborhood basis. Proposed corrective and preventive action to eliminate blighted conditions and to prepare for sound future residential development is recommended for all residential sections of the community.

There are several major community goals to be achieved through implementation of the plans and recommendations of the Neighborhood Analysis. Some of these goals are listed below:

1. To eliminate blight and potential blight throughout the community by developing a program of neighborhood improvements, redevelopment and other projects and activities necessary to achieve the desired results.
2. To create and maintain a desirable living environment in the community which will foster civic pride, stronger citizen participation in civic affairs and will promote public health, safety, and welfare.
3. To assemble background information, planning data, and other materials which can be used to guide present and future development and which will help to form the basis of future comprehensive planning programs.
4. In particular, to provide basic guidance and information to assist the community in analyzing various means for achieving redevelopment and rehabilitation, and to determine the best and most feasible approach in keeping with local conditions and financial ability.

## DEFINITION OF TERMS

Area Treatment - A classification system for identifying the recommended level of treatment for a specified area. The following classifications are used in this study:

- a. Conservation - normal maintenance, code and ordinance enforcement and/or minor public improvements. It is generally assigned to a stable and sound residential section.
- b. Light Rehabilitation - minor repairs to a significant number of structures, strict code and ordinance enforcement and/or several minor public improvements or a limited amount of public improvements. It is generally specified for residential sections which are beginning to show signs of decline.
- c. Heavy Rehabilitation - minor and major repairs to a significant number of structures, very strict code and ordinance enforcement, and/or major public improvements. Some spot clearance may be necessary. It is normally designated for residential sections which exhibit definite signs of deterioration, have concentrations of substandard housing and have inadequate community facilities and services, street pattern, and/or land use pattern.
- d. Redevelopment - extensive clearance and rebuilding and major repairs to a majority of the structures, very strict code and ordinance enforcement and major public improvements. Such treatment is normally indicated for residential sections in which the majority of structures are substandard and a significant number require clearance and where other factors such as land use, street pattern and community facilities and services, substantially detract from sound residential development. Such areas may be redeveloped to residential and/or non-residential uses.

Blight - Physical deterioration of a significant amount of structures and to the general residential environment. It may also involve mixed and/or incompatible land uses, unfunctional street pattern, periodic inundation, odors, noise, and other conditions which detract from a proper residential environment.

Blighting Influence - A condition, such as overcrowding of structures, poor zoning or one of the items listed under "Blight" which contributes to blight but is not necessarily the major cause of blight.

Structural Conditions - A classification system for identifying the physical condition of a structure.

- a. Good - sound structure, usually well preserved or relatively new, which requires only periodic maintenance.



- b. Fair - sound structure which requires minor repairs, beyond what may be considered normal maintenance.
- c. Deteriorated - structures which need extensive repairs to make them safe for human habitation.
- d. Dilapidated - structures in such poor condition that the only feasible course of action is to demolish the entire structure.
- e. Standard - sound structures listed in "Good" or "Fair" condition.
- f. Substandard - unsound structures listed in "Deteriorated" or "Dilapidated" condition.

## SUMMARY OF CHARACTERISTICS BY ANALYSIS AREA

For convenience in making comparisons and for analysis purposes, a summary of characteristics for each Neighborhood Analysis Area has been compiled which includes data on social and economic characteristics, tabulations of the conditions of residential and non-residential structures, description of the circulation system and public facilities. Blighting characteristics are identified and recommended treatment is outlined.

As the public utilities, including water supply, sanitary sewage and the electrical system, are generally satisfactorily provided throughout the City of Key West, these items are omitted from this summary.

On each map in this Neighborhood Analysis study, the boundary of each Neighborhood Analysis Area has been shown. It is pointed out that those areas have the same boundaries as the "Planning Analysis Areas" described earlier in the Existing Land Use section of this report. The most obvious reason for this is to facilitate the utilization of data assembled through the household survey which was collected and organized by these areas. In addition, data on land use was also assembled by Planning Analysis Areas. An unnecessarily complex reorganization of analytical material would have been required had other areas been selected. Finally, comparison between the boundaries outlined by the analysis areas and those based exclusively on concepts of the "ideal" neighborhood's size, number of households, freedom from arterial traffic, and orientation to a commonly used set of recreation, school, and commercial facilities indicated no serious violation of such concepts.

At any rate, structuring analysis areas on ideal neighborhoods would not have been possible. Also, three or four presently identifiable neighborhoods have such ill-defined boundaries that they are reasonably identified by the proper combination of several planning analysis areas together.

## NEIGHBORHOOD ANALYSIS AREA ONE

### Boundary Description

North - Petronia Street  
 East - Simonton Street  
 South - Atlantic Ocean and Naval Station Boundary  
 West - Naval Station Boundary

### Social and Economic Characteristics

Total Population	3,429
Adult Age Group Heavily Represented	65 and over
Pre-Adult Age Group Heavily Represented	None
Major Occupations	Services, Building Trades
Total Households	981
Persons Per Household	3.50
Full Time Workers Per Household	0.80
Autos Per Household	0.44
Median Household Income	\$2,765.00
Median Value of Owner-Occupied Housing	\$4,816.00
Median Monthly Rent	\$ 62.00
% of Households in Rental Units	54.2%
% of Households with Plans to Move	2.2%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	350 (354)*	47.6 (47.9)*	86	69.9	436 (440)*	50.8 (51.0)
Good	64 ( 68)	8.7 ( 9.2)	61	49.5	125 (129)	14.6 (14.9)
Fair	286 (286)	38.9 (38.7)	25	20.4	311 (311)	36.2 (36.1)
Substandard	385 (385)	52.4 (52.1)	37	30.1	422 (422)	49.2 (49.0)
Deteriorated	349 (349)	47.4 (47.2)	31	25.2	380 (380)	44.2 (44.1)
Dilapidated	36 ( 36)	5.0 ( 4.9)	6	4.9	42 ( 42)	5.0 ( 4.9)
TOTAL STRUCTURES	735 (739)	100.0%	123	100.0%	858 (862)	100.0%

\*Figures in parentheses denote the inclusion of mobile homes as residential structures.

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is provided by Whitehead Street, Duval Street, Simonton Street, and Truman Avenue. These streets are congested but well maintained.

Collector Circulation is provided by the southern segment of Duval and Simonton Streets and by United Street. Collector circulation appears adequate.

Local Circulation is hampered by narrow streets and alleys, many of which have rights-of-way less than 40 feet width.

### 2. Public Facilities and Services:

Elementary School children must cross several busy streets to attend their respective schools.

Recreational Facilities include the present location of the Florida Keys Junior College Gymnasium. Other facilities in the area are in need of maintenance, and the swimming pool has been abandoned.

Cultural Facilities include the Key West Light House and Hemingway House.

Fire and Police Protection are adequate.

## Blighting Characteristics

With over half of its residential structures and over 30% of the non-residential buildings structurally substandard, the area north of United Street is one of the most heavily blighted in the City. Narrow streets with inadequate off-street parking constrict traffic. Prohibitively high housing densities, and the need for recreation and open space are critical. There is relatively little evidence of basic maintenance.

## Recommended Treatment

North of United Street, extensive redevelopment and some heavy rehabilitation. South of United Street, light rehabilitation.

## NEIGHBORHOOD ANALYSIS AREA TWO

### Boundary Description

North - Eaton Street  
 East - Simonton Street  
 South - Petronia Street  
 West - Naval Station Boundary

### Social and Economic Characteristics

Total Population	383
Adult Age Group Heavily Represented	None
Pre-Adult Age Group Heavily Represented	None
Major Occupations	Clerical and Sales, Building Trades
Total Households	132
Persons Per Household	2.93
Full Time Workers Per Household	0.90
Autos Per Household	0.80
Median Household Income	\$5,656.00
Median Value of Owner-Occupied Housing	\$9,687.00
Median Monthly Rent	\$ 85.00
% of Households in Rental Units	53.3%
% of Households with Plans to Move	3.3%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	73	46.4	80	55.1	153	50.6
Good	60	38.2	56	38.6	116	38.4
Fair	13	8.2	24	16.5	37	12.2
Substandard	84	53.6	65	44.9	149	49.4
Deteriorated	75	47.7	51	35.1	126	41.7
Dilapidated	9	5.9	14	9.8	23	7.7
TOTAL STRUCTURES	157	100.0%	145	100.0%	302	100.0%

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is provided by Whitehead, Duval, Simonton, and Eaton Streets. While congested, these streets are well maintained.

Collector Circulation is adequately provided for by Southard Street.

Local Circulation is hampered by narrow streets and alleys, many of which have rights-of-way of less than 40 feet.

### 2. Public Facilities and Services:

Elementary Schools in this area have little in the way of recreational facilities.

Recreational Facilities for the public are lacking.

Cultural Facilities also are missing from Area 2, except for the USO which is patronized by both the public and military personnel.

Fire and Police Protection are adequate.

## Blighting Characteristics

This older part of town shows a remarkable mix of good buildings alongside poor buildings. The downtown is centered in this area, there is acute lack of parking space, street congestion is strongly in evidence, and 45% of the non-residential structures are substandard. Nearly 10% are deteriorated to the point warranting clearance. Yet nearly 40% of the 73 residential structures are in "good" condition, which is particularly remarkable considering their age and proximity to the downtown, and to some of the worst living conditions in Key West just south of Angela Street. Residential densities are moderately high, but the area has no open space, and the school has an inadequate site.

## Recommended Treatment

Heavy rehabilitation north of Fleming Street. Redevelopment for the entire remainder of the area with extensive clearance south of Angela Street.



## NEIGHBORHOOD ANALYSIS AREA THREE

### Boundary Description

North - Gulf of Mexico  
 East - Boundary of Naval Station Annex  
 South - Eaton Street  
 West - Naval Station Boundary

### Social and Economic Characteristics

Total Population	1,163
Adult Age Group Heavily Represented	None
Pre-Adult Age Group Heavily Represented	None
Major Occupations	Professional, Clerical and Sales
Total Households	385
Persons Per Household	3.03
Full Time Workers Per Household	1.01
Autos Per Household	0.81
Median Household Income	\$5,690.00
Median Value of Owner-Occupied Housing	\$9,350.00
Median Monthly Rent	\$ 95.00
% of Households in Rental Units	58.6%
% of Households with Plans to Move	4.6%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	133 (156)*	64.8 (68.4)*	106	62.3	239 (262)*	63.7 (65.8)
Good	24 ( 47)	11.7 (20.6)	64	37.6	88 (111)	23.4 (27.9)
Fair	109 (109)	53.1 (47.8)	42	24.7	151 (151)	40.3 (37.9)
Substandard	72 ( 72)	35.2 (31.6)	64	37.7	136 (136)	36.3 (34.2)
Deteriorated	50 ( 50)	24.3 (21.9)	47	27.6	97 ( 97)	25.8 (24.4)
Dilapidated	22 ( 22)	10.9 ( 9.7)	17	10.1	39 ( 39)	10.5 ( 9.8)
TOTAL STRUCTURES	205 (228)	100 0%	170	100.0%	375 (398)	100.0%

\*Figures in parentheses denote the inclusion of mobile homes as residential structures.

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is provided by Duval, Simonton, and Eaton Streets. These streets are congested but well maintained.

Collector Circulation is provided adequately by Whitehead and Front Streets.

Local Circulation is hampered by street and alley rights-of-way and pavement widths which are too narrow to function properly.

### 2. Public Facilities and Services:

Elementary Schools are close by but lack recreational facilities.

Recreational Facilities include Mallory Square, an excellent passive recreational area, plus good fishing.

Cultural Facilities include Mallory Square and Audubon House.

Fire and Police Protection are adequate in this area.

## Blighting Characteristics

While in relatively poor condition, this area which embraces the oldest parts of Key West is generally in better condition than the other old parts. Traffic congestion is compounded by on-street parking. Deficiencies include a lack of playgrounds and an inadequate elementary school site. Obsolete layouts of lots and overcrowding of buildings on the land is prevalent.

## Recommended Treatment

Recommended heavy rehabilitation involves extensive use of spot clearance. Development of historic district and preservation of buildings.

## NEIGHBORHOOD ANALYSIS AREA FOUR

### Boundary Description

North - Eaton Street  
 East - White Street  
 South - Truman Avenue  
 West - Simonton Street

### Social and Economic Characteristics

Total Population	3,956
Adult Age Group Heavily Represented	65 and over
Pre-Adult Age Group Heavily Represented	None
Major Occupations	Building Trades, Clerical and Sales
Total Households	1,370
Persons Per Household	2.89
Full Time Workers Per Household	0.78
Autos Per Household	0.68
Median Household Income	\$3,620.00
Median Value of Owner-Occupied Housing	\$7,210.00
Median Monthly Rent	\$ 60.00
% of Households in Rental Units	39.6%
% of Households with Plans to Move	4.5%

### Structural Conditions

<u>Structural Condition:</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	655	63.9	67	58.2	722	63.3
Good	58	5.6	36	31.3	94	8.2
Fair	597	58.3	31	26.9	628	55.1
Substandard	370	36.1	48	41.8	418	36.7
Deteriorated	350	34.1	33	28.6	383	33.5
Dilapidated	<u>20</u>	<u>2.0</u>	<u>15</u>	<u>13.2</u>	<u>35</u>	<u>3.2</u>
TOTAL STRUCTURES	1,025	100.0%	115	100.0%	1,140	100.0%

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is provided by Eaton Street, White Street, Truman Avenue, and Simonton Street. These streets, though well located for their function, are congested.

Collector Circulation is adequately provided by Southard and Grinnell Streets.

Local Circulation, as in much of the older area of Key West, is inadequately provided by streets and alleys of insufficient right-of-way widths. The situation is particularly acute in the vicinity of the intersection of Angela Street, Elizabeth Street, and Windsor Lane.

### 2. Public Facilities and Services:

Elementary School facilities are adequate.

Recreational Facilities are far below acceptable standards.

Cultural Facilities are non-existent in Area 4, except for the Monroe County Library which contains approximately 50,000 volumes.

Fire and Police Protection are adequate.

## Blighting Characteristics

The most noticeable deficiencies are: relatively high structural deterioration, large numbers of substandard lot sizes, obsolete system and pattern of lots and blocks, poor access to block interiors, cemetery intrusion into residential areas, congested streets, lack of off-street parking, and lack of recreational facilities.

## Recommended Treatment

Redevelopment including extensive spot clearance, except for heavy rehabilitation east of the cemetery and along White Street. Designation of historic district north of Southard Street and preservation of buildings.

## NEIGHBORHOOD ANALYSIS AREA FIVE

### Boundary Description

North - Truman Avenue  
 East - White Street  
 South - Atlantic Ocean  
 West - Simonton Street

### Social and Economic Characteristics

Total Population	2,649
Adult Age Group Heavily Represented	50 - 64
Pre-Adult Age Group Heavily Represented	None
Major Occupations	Professional, Military
Total Households	914
Persons Per Household	2.90
Full Time Workers Per Household	0.95
Autos Per Household	1.27
Median Household Income	\$ 6,200.00
Median Value of Owner-Occupied Housing	\$10,370.00
Median Monthly Rent	\$ 102.00
% of Households in Rental Units	41.6%
% of Households with Plans to Move	13.9%

### Structural Conditions

<u>Structural Condition:</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	551 (565)*	78.7 (79.1)*	89	76.0	640 (654)*	78.3 (78.7)*
Good	210 (224)	30.0 (31.3)	69	58.9	279 (293)	34.1 (35.3)
Fair	341 (341)	48.7 (47.8)	20	17.1	361 (361)	44.2 (43.4)
Substandard	149 (149)	21.3 (20.9)	28	24.0	177 (177)	21.7 (21.3)
Deteriorated	147 (147)	21.0 (20.6)	20	17.0	167 (167)	20.4 (20.1)
Dilapidated	2 ( 2)	0.3 ( 0.3)	8	7.0	10 ( 10)	1.3 ( 1.2)
TOTAL STRUCTURES	700 (714)	100.0%	117	100.0%	817 (831)	100.0%

\*Figures in parentheses denote the inclusion of mobile homes as residential structures.

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is adequately provided by Truman Avenue and White Street. Congestion exists but not to the same degree as in areas one through four.

Collector Circulation is adequately provided by the southern segment of Simonton Street, by Grinnell Street, United Street, Reynolds Street, and Atlantic Boulevard.

Local Circulation is adequate except on a few streets which have inadequate rights-of-way.

### 2. Public Facilities and Services:

Elementary School facilities are adequate.

Recreational Facilities, with the exception of Higgs Park, are non-existent within the area. Higgs Park is nicely maintained and used by residents of all areas.

Cultural Facilities include the Convent of Mary Immaculate Museum.

Fire and Police Protection are adequate.

## Blighting Characteristics

Substandard lot sizes and mixed land uses are prevalent north of United Street. Narrow streets, lack of off-street parking contribute to traffic problems. A mix of duplex and multi-family apartments and a military use south of United Street detract from the stability of the single-family structures. Playgrounds are inadequate.

## Recommended Treatment

Heavy rehabilitation north of United, including the two blocks west of Reynolds Elementary School; light rehabilitation south of United to Seminole; and, conservation south of Seminole.



## NEIGHBORHOOD ANALYSIS AREA SIX

### Boundary Description

North - Palm Avenue  
 East - Palm Avenue  
 South - Truman Avenue  
 West - White Street

### Social and Economic Characteristics

Total Population	2,975
Adult Age Group Heavily Represented	21-34
Pre-Adult Age Group Heavily Represented	0-5
Major Occupations	Buildings Trades, Military
Total Households	786
Persons Per Household	3.79
Full Time Workers Per Household	0.97
Autos Per Household	0.98
Median Household Income	\$4,642.00
Median Value of Owner-Occupied Housing	\$9,160.00
Median Monthly Rent	\$ 97.70
% of Households in Rental Units	69.1%
% of Households with Plans to Move	24.5%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	262	89.1	23	74.1	285	87.6
Good	74	25.1	15	48.3	89	27.3
Fair	188	64.0	8	25.8	196	60.3
Substandard	32	10.9	8	25.9	40	12.4
Deteriorated	29	9.8	6	19.3	35	10.7
Dilapidated	3	1.1	2	6.6	5	1.7
TOTAL STRUCTURES	294	100.0%	31	100.0%	325	100.0%

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is adequately provided by White Street and Palm and Truman Avenues.

Collector Circulation is provided adequately by Eisenhower Drive.

Local Circulation offers difficulties in the way of inadequate street and alley rights-of-way.

### 2. Public Facilities and Services:

Elementary School facilities are adequate.

Recreational Facilities in existence indicate a definite need for more park land areas.

Cultural Facilities are lacking in this area.

Fire and Police Protection are adequate.

## Blighting Characteristics

Substandard lot sizes, lack of inducement or incentive to modernize and bring properties up to date, lack of off-street parking and recreational facilities, high percentage of single-family homes non-owner occupied, and inadequate rights-of-way on Pine, Pearl, and Angela Streets are all blighting characteristics for this area.

## Recommended Treatment

Recommended treatment is heavy rehabilitation

## NEIGHBORHOOD ANALYSIS AREA SEVEN

### Boundary Description

North - Truman Avenue  
 East - Bertha and First Streets  
 South - Atlantic Ocean  
 West - White Street

### Social and Economic Characteristics

Total Population	3,124
Adult Age Group Heavily Represented	50-64
Pre-Adult Age Group Heavily Represented	10-14
Major Occupations	Professional ; Military
Total Households	925
Persons Per Household	3.38
Full Time Workers Per Household	0.93
Autos Per Household	1.18
Median Household Income	\$ 6,100.00
Median Value of Owner-Occupied Housing	\$12,260.00
Median Monthly Rent	\$ 75.50
% of Households in Rental Units	35.4%
% of Households with Plans to Move	6.7%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	836 (878)*	93.9 (94.2)*	34	85.0	870 (912)*	93.5 (93.8)*
Good	584 (626)	65.6 (67.2)	26	65.0	610 (652)	65.5 (67.1)
Fair	252 (252)	28.3 (37.0)	8	20.0	260 (260)	28.0 (26.7)
Substandard	54 ( 54)	6.1 ( 5.8)	6	15.0	60 ( 60)	6.5 ( 6.2)
Deteriorated	47 ( 47)	5.2 ( 5.0)	6	15.0	53 ( 53)	5.6 ( 5.5)
Dilapidated	7 ( 7)	0.9 ( 0.9)	-	-	7 ( 7)	0.9 ( 0.7)
TOTAL STRUCTURES	890 (932)	100.0%	40	100.0%	930 (972)	100.0%

\*Figures in parentheses denote the inclusion of mobile homes as residential structures.

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is adequately provided by Truman Avenue, Flagler Avenue, and Bertha, White, and First Streets.

Collector Circulation is adequately provided by United Street, Atlantic Boulevard, and the combination of Leon Street and Eisenhower Drive.

Local Circulation is, for the most part, adequate.

### 2. Public Facilities and Services:

Elementary School children in the southern portion of this area must go long distances to and from school.

Recreational Facilities include Bayview Park which serves both Areas 6 and 7. There is a need for more park land in the southern portion of this area.

Cultural Facilities are absent from Area 7.

Fire and Police Protection are adequate.

## Blighting Characteristics

Substandard lot sizes, congestion, and high density in northwest sector. Lack of motivation for maintaining properties in proper condition. Lack of sidewalks south of United Street.

## Recommended Treatment

Heavy rehabilitation north of United and west of Pearl Street. Light rehabilitation north of Flagler Street to United west of Thompson Street, and to South Street east of Thompson, and one block deep along First Street. Conservation for the remainder of the area.

## NEIGHBORHOOD ANALYSIS AREA EIGHT

### Boundary Description

North - Gulf of Mexico  
 East - President Kennedy Drive  
 South - Flagler Avenue  
 West - First Street

### Social and Economic Characteristics

Total Population	3,268
Adult Age Group Heavily Represented	35-49
Pre-Adult Age Group Heavily Represented	15-20
Major Occupations	Professional, Building Trades
Total Households	929
Persons Per Household	3.52
Full Time Workers Per Household	1.32
Autos Per Household	1.45
Median Household Income	\$ 7,750.00
Median Value of Owner-Occupied Housing	\$15,000.00
Median Monthly Rent	\$ 95.80
% of Households in Rental Units	41.1%
% of Households with Plans to Move	11.3%

### Structural Conditions

Structural Condition	Residential		Non-Residential		Total	
	Number	% of Residential	Number	% of Non-Residential	Number	% of PAA
Standard	755	96.0	32	96.9	787	96.0
Good	703	89.4	25	75.7	728	88.8
Fair	52	6.6	7	21.2	59	7.2
Substandard	31	4.0	1	3.1	32	4.0
Deteriorated	3	0.3	1	3.1	4	0.4
Dilapidated	28	3.7	-	-	28	3.6
TOTAL STRUCTURES	786	100.0%	33	100.0%	819	100.0%

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is provided adequately by Roosevelt Boulevard, Flagler Avenue, First Street, and President Kennedy Drive.

Collector Circulation is adequately provided by MacMillan Street.

Local Circulation is adequate.

### 2. Public Facilities and Services:

Elementary School facilities are adequate.

Recreational Facilities are needed in the western portion of this area.

Cultural Facilities are lacking in Area 8.

Fire and Police Protection are adequate.

## Blighting Characteristics

Scattering of mixed land uses, some of which are exhibiting signs of deterioration. Lack of sidewalks and curbs, poor street appearance. Apartments along Kennedy Drive are dilapidated.

## Recommended Treatment

Light rehabilitation west of the canal east of 8th Street. Conservation for all other areas, except for redevelopment including total clearance of the apartments along Kennedy Drive.



## NEIGHBORHOOD ANALYSIS AREA NINE

### Boundary Description

North - Roosevelt Boulevard  
 East - Roosevelt Boulevard  
 South - Flagler Avenue  
 West - President Kennedy Drive

### Social and Economic Characteristics

Total Population	4,196
Adult Age Group Heavily Represented	21-34
Pre-Adult Age Group Heavily Represented	0-5
Major Occupations	Military, Professional
Total Households	1,228
Persons Per Household	3.42
Full Time Workers Per Household	1.14
Autos Per Household	1.17
Median Household Income	\$5,916.00
Median Value of Owner-Occupied Housing	\$9,630.00
Median Monthly Rent	\$ 86.00
% of Households in Rental Units	40.4%
% of Households with Plans to Move	11.9%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	417 (745)*	73.4 (83.1)	21	95.4	438 (766)*	74.2 (83.4)*
Good	405 (733)	71.3 (81.8)	15	68.1	420 (748)	71.1 (81.5)
Fair	12 ( 12)	2.1 ( 1.3)	6	27.3	18 ( 18)	3.1 ( 1.9)
Substandard	151 (151)	26.6 (16.9)	1	4.6	152 (152)	25.8 (16.6)
Deteriorated	151 (151)	26.6 (16.9)	1	4.6	152 (152)	25.8 (16.6)
Dilapidated	- ( - )	- ( - )	-	-	- ( - )	- ( - )
TOTAL STRUCTURES	568 (896)	100.0%	22	100.0%	590 (918)	100.0%

\*Figures in parentheses denote the inclusion of mobile homes as residential structures.

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is adequately provided to Area 9 by Roosevelt Boulevard, Flagler Avenue, and President Kennedy Drive.

Collector Circulation is adequately provided by Northside Drive, Twentieth Street, and Duck Key Avenue.

Local Circulation is adequate.

### 2. Public Facilities and Services:

Elementary Schools are adequate.

Recreational Facilities are needed in the eastern portion of this area.

Cultural Facilities are lacking.

Fire and Police Protection are adequate.

## Blighting Characteristics

Apartments along Flagler Avenue between 14th and 16th Street are dilapidated. Abandoned Navy housing area is a potential generator of vandalism and criminal acts. Lack of sidewalks between Duck Key and Flagler Street.

## Recommended Treatment

Conservation, except for redevelopment of apartments along Flagler Avenue and rehabilitation of the Navy housing area.

## NEIGHBORHOOD ANALYSIS AREA TEN

### Boundary Description

North - Flagler Avenue  
 East - Atlantic Ocean  
 South - Airport Boundary and the Atlantic Ocean  
 West - Bertha Street

### Social and Economic Characteristics

Total Population	1,159
Adult Age Group Heavily Represented	35-49
Pre-Adult Age Group Heavily Represented	10-14
Major Occupations	Professional, Military
Total Households	322
Persons Per Household	3.59
Full Time Workers Per Household	1.04
Autos Per Household	1.49
Median Household Income	\$ 9,318.00
Median Value of Owner-Occupied Housing	\$21,530.00
Median Monthly Rent	\$ 122.00
% of Households in Rental Units	23.0%
% of Households with Plans to Move	10.8%

### Structural Conditions

Structural Condition	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	Number	% of Residential	Number	% of Non-Residential	Number	% of PAA
Standard	269	100.0	16	100.0	285	100.0
Good	263	97.7	15	93.7	278	97.5
Fair	6	2.3	1	6.3	7	2.5
Substandard	-	-	-	-	-	-
Deteriorated	-	-	-	-	-	-
Dilapidated	-	-	-	-	-	-
TOTAL STRUCTURES	269	100.0%	16	100.0%	285	100.0%

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is adequately provided by Roosevelt Boulevard, Flagler Avenue, and Bertha Street.

Collector Circulation is provided adequately by Venetian Drive.

Local Circulation is adequate.

### 2. Public Facilities and Services:

Elementary Schools are adequate.

Recreational Facilities, with the exception of the high school property, are lacking in this area.

Cultural Facilities are non-existent in Area 10.

Fire and Police Protection are adequate.

## Blighting Characteristics

Lack of sidewalks subjects pedestrians and children to light but dangerous traffic along Riviera and Sunrise Drives. Noise from aircraft west of the airport runway is a blighting influence which may influence premature deterioration in homes located there.

## Recommended Treatment

Conservation, and install sidewalks.

## NEIGHBORHOOD ANALYSIS AREA ELEVEN\*

### Boundary Description

North - Airport Boundary  
 East - Atlantic Ocean  
 South - Atlantic Ocean  
 West - Airport Boundary

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	-	-	5	100.0	5	100.0
Good	-	-	5	100.0	5	100.0
Fair	-	-	-	-	-	-
Substandard	-	-	-	-	-	-
Deteriorated	-	-	-	-	-	-
Dilapidated	-	-	-	-	-	-
TOTAL STRUCTURES	-	-	5	100.0%	5	100.0%

### Institutional Characteristics

#### 1. Circulation Pattern:

Arterial Circulation is adequately provided by Roosevelt Boulevard.

Collector Circulation is non-existent because this area contains, for the most part, airport property.

Local Circulation regarding access to the airport terminal is adequate.

#### 2. Public Facilities and Services:

Elementary School facilities are non-existent.

Recreational Facilities include Smathers Beach.

Cultural Facilities include the East Martello Tower Museum.

Fire and Police Protection are adequate.

\*Absence of social and economic characteristics owing to lack of resident population.

## NEIGHBORHOOD ANALYSIS AREA TWELVE \* (Stock Island)

### Boundary Description

North - Gulf of Mexico  
 East - Gulf of Mexico  
 South - U.S. 1  
 West - Gulf of Mexico

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	1	100.0	8	100.0	9	100.0
Good	1	100.0	6	75.0	7	77.7
Fair	-	-	2	25.0	2	22.3
Substandard	-	-	-	-	-	-
Deteriorated	-	-	-	-	-	-
Dilapidated	-	-	-	-	-	-
TOTAL STRUCTURES	1	100.0%	8	100.0%	9	100.0%

### Institutional Characteristics

#### 1. Circulation Pattern:

Arterial Circulation is provided adequately by U.S. 1.

Collector Circulation is provided to the Monroe County Hospital and adjacent uses. However, the surface treated paving is beginning to deteriorate.

Local Circulation is non-existent and unnecessary.

#### 2. Public Facilities and Services:

Elementary Schools are non-existent.

Recreational Facilities include Southernmost Golf Course.

Cultural Facilities are limited to the Botanical Gardens.

Fire and Police Protection are adequate.

\*Absence of social-economic characteristics owing to lack of resident population.



## NEIGHBORHOOD ANALYSIS AREA FOURTEEN\*

### Social and Economic Characteristics

Total Population	1,084
Adult Age Group Heavily Represented	35-49
Pre-Adult Age Group Heavily Represented	5-9 or 10-14
Major Occupations	Military, Building Trades
Total Households	280
Persons Per Household	3.86
Full Time Workers Per Household	0.66
Autos Per Household	0.88
Median Household Income	\$3,360.00
Median Value of Owner-Occupied Housing	\$8,330.00
Median Monthly Rent	\$ 70.75
% of Households in Rental Units	90.8%
% of Households with Plans to Move	10.8%

\*Data on Structural Conditions and Institutional Characteristics collapsed together with that of Area 3.

## NEIGHBORHOOD ANALYSIS AREA FIFTEEN (Dredger's Key - Sigsbee Park)

### Boundary Description

North - Dredger's Key  
 East - Dredger's Key  
 South - Dredger's Key  
 West - Dredger's Key

### Social and Economic Characteristics

Total Population	5,267
Adult Age Group Heavily Represented	21-34
Pre-Adult Age Group Heavily Represented	0-5
Major Occupations	Military
Total Households	1,103
Persons Per Household	4.78
Full Time Workers Per Household	1.19
Autos Per Household	1.13
Median Household Income	\$5,832.00
Median Value of Owner-Occupied Housing	-
Median Monthly Rent	\$ 104.25
% of Households in Rental Units	100.0
% of Households with Plan to Move	12.7

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	393	100.0	1	100.0	394	100.0
Good	393	100.0	1	100.0	394	100.0
Fair	-	-	-	-	-	-
Substandard	-	-	-	-	-	-
Deteriorated	-	-	-	-	-	-
Dilapidated	-	-	-	-	-	-
TOTAL STRUCTURES	393	100.0%	1	100.0%	394	100.0%

## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation, though not actually provided within the area, is supplied by Roosevelt Boulevard.

Collector Circulation is adequately provided by President Kennedy Drive.

Local Circulation is adequate.

### 2. Public Facilities and Services:

Elementary School facilities are adequate.

Recreational Facilities are also adequate.

Cultural Facilities are non-existent.

Fire and Police Protection are adequate.

## Blighting Characteristics

Lack of protected and paved play areas for heavily represented young age group to confine active play to proper areas consequently producing ruined lawns in apartment areas.

## Recommended Treatment

Although military housing is outside of the City's jurisdiction, it is pointed out that provision of necessary facilities should improve conditions.

## NEIGHBORHOOD ANALYSIS AREA SIXTEEN

### Boundary Description

North - Gulf of Mexico  
 East - Gulf of Mexico  
 South - U.S. 1  
 West - Gulf of Mexico

### Social and Economic Characteristics

Total Population	426
Adult Age Group Heavily Represented	35-49
Pre-Adult Age Group Heavily Represented	0-5
Major Occupations	Professional, Military
Total Households	109
Persons Per Household	3.92
Full Time Workers Per Household	1.16
Autos Per Household	1.56
Median Household Income	\$10,833.00
Median Value of Owner-Occupied Housing	\$21,250.00
Median Monthly Rent	\$ 172.00
% of Households in Rental Units	24.0%
% of Households with Plans to Move	24.0%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	128	100.0	-	-	128	100.0
Good	128	100.0	-	-	128	100.0
Fair	-	-	-	-	-	-
Substandard	-	-	-	-	-	-
Deteriorated	-	-	-	-	-	-
Dilapidated	-	-	-	-	-	-
TOTAL STRUCTURES	128	100.0%	-	-	128	100.0%

### Institutional Characteristics

#### 1. Circulation Pattern:

Arterial Circulation is adequately provided by U.S. 1.

Collector Circulation is adequately provided by Key Haven Road.

Local Circulation is well designed and maintained.

#### 2. Public Facilities and Services:

Elementary School children must travel long distances by bus. However, population does not justify a new school on Raccoon Key at present.

Recreational Facilities are non-existent.

Cultural Facilities are also non-existent.

Fire and Police Protection are adequate.

### Blighting Characteristics

Lack of sidewalks and proper street curbs and gutters. The elementary schools are not convenient.

### Recommended Treatment

Conservation is the recommended treatment.

## NEIGHBORHOOD ANALYSIS AREA SEVENTEEN (Stock Island)

### Boundary Description

North - U. S. 1  
 East - Atlantic Ocean  
 South - Atlantic Ocean  
 West - Atlantic Ocean

### Social and Economic Characteristics

Total Population	2,901
Adult Age Group Heavily Represented	21-34
Pre-Adult Age Group Heavily Represented	0-5
Major Occupations	Military, Building Trades
Total Households	816
Persons Per Household	3.56
Full Time Workers Per Household	1.18
Autos Per Household	1.23
Median Household Income	\$5,718.00
Median Value of Owner-Occupied Housing	\$5,352.00
Median Monthly Rent	\$ 91.10
% of Households in Rental Units	17.1%
% of Households with Plans to Move	23.5%

### Structural Conditions

<u>Structural Condition</u>	<u>Residential</u>		<u>Non-Residential</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Residential</u>	<u>Number</u>	<u>% of Non-Residential</u>	<u>Number</u>	<u>% of PAA</u>
Standard	54 (601)*	80.6 (97.9)*	45	76.2	99 (646)*	78.6 (96.0)*
Good	38 (585)	56.7 (95.3)	20	33.8	58 (605)	46.0 (89.9)
Fair	16 ( 16)	23.9 ( 2.6)	25	42.4	41 ( 41)	32.6 ( 6.1)
Substandard	13 ( 13)	19.4 ( 2.1)	14	23.8	27 ( 27)	21.4 ( 4.0)
Deteriorated	12 ( 12)	17.9 ( 2.0)	14	23.8	26 ( 26)	20.6 ( 3.9)
Dilapidated	1 ( 1)	1.5 ( 0.1)	-	-	1 ( 1)	0.8 ( 0.1)
TOTAL STRUCTURES	67 (614)	100.0%	59	100.0%	126 (673)	100.0%

\*Figures in parentheses denote the inclusion of mobile homes as residential structures.



## Institutional Characteristics

### 1. Circulation Pattern:

Arterial Circulation is actually provided only by U.S. 1. Additional arterial street mileage should be considered for future construction.

Collector Circulation is adequately provided by Cross Street, Fifth Street, Maloney Avenue, Fourth Avenue, and Fifth Avenue.

Local Circulation, though of sufficient width, is haphazardly designed and sometimes poorly maintained.

### 2. Public Facilities and Services:

Elementary Schools are non-existent and children must travel long distances to reach their respective schools.

Recreational Facilities are non-existent.

Cultural Facilities also are non-existent.

Fire and Police Protection are adequate.

## Blighting Characteristics

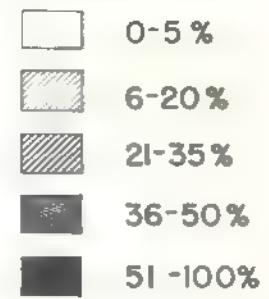
Mixed and incompatible land uses, haphazard street system, poor development standards for trailer areas. Elementary schools are not convenient, lack of elemental maintenance of yards and grounds, lack of playgrounds.

## Recommended Treatment

Light rehabilitation, although outside of City's jurisdiction, efforts should be made toward improving conditions by raising trailer park standards, developing improved major street system and installation of required facilities.

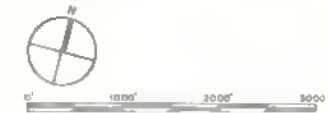


PERCENTAGE OF SUBSTANDARD STRUCTURES



GENERALIZED STRUCTURAL CONDITIONS MAP

KEY WEST URBAN AREA



## CHARACTERISTICS OF HOUSEHOLDS RESIDING IN AREAS OF RESIDENTIAL BLIGHT

### Purpose

The initial purpose of this section of the Neighborhood Analysis is to identify and describe:

- (a) locations and patterns of residential blight within the Key West community; and,
- (b) the characteristics of households in areas of poor housing, and particularly those characteristics essential to the formulation of programs for better housing.

A second purpose is to measure the practicality of taking public action to improve housing conditions. The measurement is in terms of the degree to which poor housing is associated with a willingness and/or intent to move. An estimate of this association has been developed through analysis of housing conditions, incomes, and mobility of households.

Admittedly, even if household mobility were significantly prompted by poor housing conditions, that factor is only one of several to be considered. While not as germane to the scope of this section, achieving positive outcome to housing improvement activities would require more than a relatively large proportion of affected households with pre-set tendencies or intentions to move. A favorable result would also depend on:

- (a) financial assistance programs, for which the community is eligible, with funds available to supplement local resources;
- (b) the practicality of solutions to problems present in areas of residential blight that stem from traffic movement, structural density, open space, etc., rather than housing quality per se;
- (c) practicality of pursuing other policies - e.g., doing nothing, or taking steps to retain households in poor quality housing - compared to
- (d) the practicality of reconciling goals set by normative judgment - i.e., what should or should not be done - with the level of achievement attainable through the use of available resources and acceptable solutions.

In one fashion or another, these other considerations are touched upon in the discussion to follow. In particular, practical goals enter the discussion as it shifts into a detailed accounting of housing needs. And, that accounting comprises the third and final purpose of this section.



## Location and Patterns of Residential Blight

### Methodology

Defining blight in operational terms - terms subject to measurement - was very important to the analysis of household characteristics and the subsequent elaboration of housing needs. Consequently, structural conditions were recorded on a lot-by-lot basis using data assembled from the recent re-appraisal of real property. At least two arguments can be cited to justify separating the household interview schedule from the recording of structural conditions.\*

Equally important was the need to develop a precise method of noting shifts in the degree and location of residential blight. Otherwise, the possibility of detecting changes in household characteristics and tracing them to such shifts would be erased. The primary decision was to measure degree of blight using the residential block as the object to be measured.\*\* The unit of measurement consisted of the per cent of residential structures in the blocks that are substandard. Moreover, because there are many blocks in which the individual structures are wedged together in an irregular fashion, it is extremely difficult to pin-point the appraisal data that pertains to any particular one. By comparison, the precise condition and number of structures in a given block are extremely simple to establish.

### Location of Households in Blighted Housing

Having set up the "ground rules" for classifying blocks according to degree of blight, the number of households within each classification was then determined. This distribution is recorded in Table 1. Blocks contained in each of the first four series, and the number of interviews scheduled in each, are listed in Appendix A. Blocks in each series are also identified on the accompanying map. Certain patterns of concentration are evident from the map, and can be described as follows:

- (a) Series 1:           1. between Angela and Truman, west of Duval; and,  
                          2. along President Kennedy Drive, between 12th and 16th Streets north of Flagler.
- (b) Series 2:           along Duval between Petronia and Catherine.

- \* (1) Had structural condition been based on judgments by the survey personnel, rather than by appraisers, the error would have been both unmeasurable and non-uniform. Appraisers' judgments would presumably contain uniform error, if any.
- (2) Since error in judgment or interpretation is not measurable in the same way as are sampling errors and errors in recording, no confidence intervals could have been calculated for the survey-derived estimates of structural conditions. The 100% canvass of the property record poses no such problem.

- \*\* In view of the lack of homogeneity within blocks west of White Street, the advantages of the block over the individual structure are akin to the clear picture of long-term trends obtainable from the time series data by "smoothing" or sifting out seasonal and cyclical changes.

Table 1

## Households and Housing Units Classified by Structural Condition

Series Number	Condition of Block: % of Residential Structures That are Substandard	Area Housing Units		Households	
		Number	% of Total	Number	% of Total
1	60 or more	1,006	9.2	945	9.2
2	50 - 59	405	3.7	405	3.9
3	40 - 49	678	6.2	656	6.4
4	20 - 39	1,399	12.8	1,386	13.5
5	0 - 19	<u>7,444</u>	<u>68.1</u>	<u>6,888</u>	<u>67.0</u>
Total	-	10,932	100.0	10,280	100.0



- (c) Series 3:
  1. encircling the City cemetery and extending south to Virginia;
  2. between Angela and United, from Simonton west to Whitehead;
  3. the tier of blocks along the north side of United between Williams and Varela; and,
  4. the blocks north of Eaton and west of Margaret that encircle the industrially used waterfront.
- (d) Series 4: practically all other blocks north of United and west of White Street.
- (e) Series 5: practically all (other) blocks east of White Street, and the majority of blocks west of White Street that are south of United.

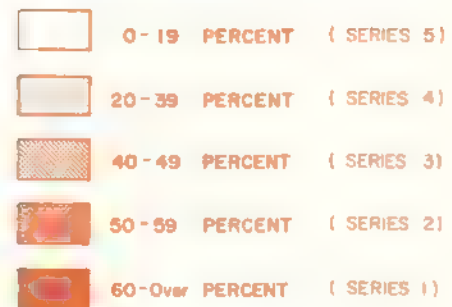
Household data related to Series 5 has little direct bearing on the subject(s) under discussion, and is represented only where needed to "round out" the picture. Because the pervasiveness of Series 4 is a background on which patterns in other series are outlined, Series 4 data has been retained for purposes of comparison.

The opportunity to cross-reference the two types of household classifications - by area of residence and by substandardness within the block of residence - has been used to develop two separate measures of concentration. In Table 2, the per cent of all households in Series 1, 2, 3, and 4 with residential locations in each planning area has been recorded. If concentration were measured on the basis of Table 2, then Area 9 would reflect the highest incidence of the worst housing conditions.

Table 2 does not, however, indicate what per cent of the households in each area is affected by poor housing. This type of distribution is presented in Table 3, and indicates the greatest proportion of poorly sheltered households is found in Area 1. Whereas the poorest housing conditions are associated with one out of every four households in Area 9, these conditions affect every third household in Area 1. The more noticeable or severe pattern of blight in Area 1 is further accentuated when Series 1 and 2 are both considered.

The pervasiveness of blight in Area 1 is not the only reason it poses a more formidable challenge to efforts aimed at improving the quality of housing. For example, almost half of the poorly housed households in Area 9 are ones with military heads; recent approval by the U.S. Defense Department of plans for constructing 200 new units will simplify their (and the community's) predicament in the foreseeable future. Moreover, as the next section makes clear, the characteristics of households in other blighted areas are not amenable to easy solutions.

PERCENT OF RESIDENTIAL SUB STANDARD  
STRUCTURES BY BLOCK



# SUBSTANDARD RESIDENTIAL BUILDINGS

KEY WEST URBAN AREA



PLANNING ANALYSIS AREA BOUNDARY



Table 2

## Area of Residence of Households Contained in Series 1, 2, 3, and 4

[illegible]

Table 3

## Per Cent of Occupied Housing of Each Area Contained in Series 1, 2, 3, 4, and 5

[illegible]

## Household Characteristics

### Household Size and Age Composition

If higher density is one reason that more people are involved in an area of poor housing than in an acre of standard housing then household size is another. Higher density and larger households are strongly associated with one another.\*

For altogether different reasons, average household size in Series 1 and in Series 2 exceeds that of the urban area by 5 %. Households clustered in Series 1 blocks along Kennedy Drive include an above average contingent of young school age children. In contrast, the (other) Series 1 and Series 2 households have a below average representation in the young age groups; they are large only because a sufficient concentration of persons 50 years of age and older more than offsets the lack of young children.

Turning to the smaller households and better housing of Series 3 and 4, the population is distributed among the age groups in a manner very similar to that of Series 2.\*\* Evidence of a smaller household in Series 3 and 4 that typifies the same basic age structure found in Series 2 is contained in Table 4.

The larger households in Series 1 and 2 and the similarity in age structures between Series 2 and Series 3 - 4 suggests that large multiple family households in certain blocks of Series 1 and 2 consist of an older and retired generation living with their children (and their children's children). If, as seems likely, the cause is rooted in economic necessity rather than cultural preference, the doubling up factor symbolizes a suppressed desire for two housing units. Because of the doubling up factor - as recorded in Table 5 - it should be noted that the jump in household income from Series 2 to Series 3 - 4 actually represents a considerably greater difference between median income of families (and/or unrelated individuals) in each series.

Although more could be said about the downward effect exerted on median income in Series 3 - 4 by retirees maintaining separate households, the significant points are:

- (a) the effect that undoubling would have on overall housing needs; and,
- (b) the relative emphasis that need be assigned the retiree group - whether doubled up or not - in any rehabilitation or re-housing program.

\* See Appendix B for density distribution of blocks within each series.

\*\* And to that of Series 1, aside from the Kennedy Drive area.

Table 4

## Size and Age Composition of Households in Blighted Areas

Age Composition	Urban Area		Type of Area							
	Number/HH	%	Series 1 Number/HH	%	Series 2 Number/HH	%	Series 3 Number/HH	%	Series 4 Number/HH	%
Below 5	.53	15.1	.62	17.2	.30	8.4	.18	6.3	.28	9.0
5 - 9	.43	12.3	.38	10.6	.40	11.1	.30	10.6	.35	11.3
10 - 14	.34	9.7	.32	8.9	.49	13.6	.23	8.1	.33	10.6
15 - 20	.26	7.4	.30	8.3	.32	8.9	.21	7.4	.22	7.1
21 - 34	.81	23.1	.86	23.9	.48	13.4	.58	20.4	.57	18.3
35 - 49	.63	18.0	.64	17.8	.66	18.4	.52	18.3	.59	18.9
50 - 64	.30	8.7	.27	7.5	.55	15.3	.44	15.5	.41	13.2
65 and Over	<u>.20</u>	<u>5.7</u>	<u>.21</u>	<u>5.8</u>	<u>.39</u>	<u>10.9</u>	<u>.38</u>	<u>13.4</u>	<u>.36</u>	<u>11.6</u>
All Groups (size of Household)	3.50	100.0	3.60	100.0	3.59	100.0	2.84	100.0	3.11	100.0



Table 5

## Characteristics Reviewed in Analysis of Multiple Family Households

Characteristic	Urban Area	Type of Area		Series 3	Series 4
		Series 1	Series 2		
% of Population 50 and Older	14.4	13.3	26.2	28.9	24.8
Average Number of Retirees per Household	.26	.29	.44	.45	.45
Median Income of Households (\$)	5,512	2,039	4,000	4,526	4,485
% of Households Containing More than One Family	3.4	6.7*	9.1	3.9	3.8

\*9.3% in Series 1 blocks west of Duval Street, and 3.6% in Series 1 blocks bordering Kennedy Drive.

Since the second point is more fundamental to the task of defining all households in poor housing, the effect of undoubling will be included later as a refinement to the discussion of general housing needs.

The relative number of retiree households living in blighted areas would indicate the need for local assistance via programs geared to the housing needs of senior citizens. By survey estimate, there are 2,842 retirees in 1,758 households within the urban area.\* Housing for this population - and the households they represent - is about equally divided between blocks with little or no blight, and the blocks in Series 1 through 4. The concentration of retiree households in poor housing stands in contrast to households with employed members, only 30% of which are located in Series 1 - 4.

The higher proportion of retiree households that are poorly housed does not, however, mean that most of the poorly housed households are comprised of retired persons. This distinction is necessary, as evidenced by the data summarized in Table 6.

\*This finding agrees quite well with the ratio that can be derived from Census data regarding the number of persons 60 and over in households headed by a person of that age. For more detail, see United States Census of Housing, 1960, "Housing of Senior Citizens, Florida Reports (HC2), Table A-1.



Of course, the per cent of retiree families or unrelated individuals becomes greater if undoubling were carried out. This per cent will also rise whenever military households are removed from Series 1 housing and re-housed in new government units. Yet, even if retirees were to outnumber the other two types of households, their willingness to be re-housed or to participate in housing rehabilitation is at least as important as the number involved.

From the standpoint of this report, the concern is not whether retiree households in poor housing are more or less inclined to move than other households living under similar housing conditions. Rather, the concern is to determine whether each type of household is more inclined to move or less inclined under conditions of poor housing. If households fail to manifest greater intent to move when housing is poor than when it is not, we shall conclude that any offer to provide better housing (at a price that can be afforded) will encounter more resistance than support. On the other hand, should the condition of housing be associated with mobility, proposals to develop a community housing program would not appear impractical.

Table 6

Households Classified by Employment Status Within Each Series

Series Number	Retired	Military Employment	Civilian Employment	Total	Retired as a % of Total
1	178	221	546	945	18.1
2	123	13	269	405	30.3
3	203	51	402	656	31.0
4	<u>349</u>	<u>123</u>	<u>914</u>	<u>1,386</u>	<u>25.2</u>
Sub Total: 1 thru 4	853	408	2,131	3,392	25.1
5	<u>905</u>	<u>3,010</u>	<u>2,973</u>	<u>6,888</u>	<u>13.1</u>
Total: 1 thru 5	1,758	3,418	5,104	10,280	17.1

## Associated Effects of Housing Conditions and Mobility

The earlier report on household characteristics within each planning area found little correlation between income and plans to move.\* Nor did mobility - as signified by the per cent of households intending to move during 1967 - correlate strongly with any other characteristic.\*\*

Because other and more authoritative studies of mobility have observed a high degree of income-mobility association, investigation of these two characteristics has been resumed within the context of housing conditions in Key West.\*\*\* This resumption should benefit from the knowledge that the level of housing conditions may be a factor, and that several characteristics acting in combination may intervene between household income and mobility. Once these complications are introduced, it is not perplexing to discover that the four series also fail to bear out the presumably strong association between income and mobility. For instance, of the two series containing the higher proportions of households intending to move, one has low income amidst the poorest of housing, and the other has the highest income within fairly standard housing.\*\*\*\*

Identifying each of the possibly significant intervening variables was accomplished by referring to the characteristics of households grouped according to neighborhood area and supplemented by the series groupings.\*\*\*\*\* Tables 7a and 7b present the values for each of the ten key characteristics. They are so designated because their combined effect on income yielded an adjusted income value that was highly correlated with the mobility ranking for each area or series.

Before stating the results, it is worth noting that the adjustments of income conforms closely to a common sense type of reasoning. The computations governing the operation of the ten characteristics was as follows:

- (a) Summing of values for those characteristics (#2 - #7) which observation of data indicates vary in an additive manner with mobility.
- (b) Factoring values for characteristics (#8 - #10) which, from observation of data, vary in proportion with mobility.

\*  $r = .420$ ;  $r = .476 - 6, 7, 10, 17$

\*\*  $r = .548$  for number of moves per year of residency at present address.

$r = .574$  for % of population 21-34 years old.

$r = .605$  for median number of years in Key West.

$r = .609$  for annual number of moves during residency in Key West.

$r = .684$  for % of households in same housing unit as of 1960.

$r = .690$  for rent paid as a % of household income.

\*\*\* See for example, p. 66-72 in Glenn H. Beyer, Housing and Society, (New York: the Macmillan Co., 1965); also the conclusions reached by Peter H. Rossi in his study entitled Why Families Move, (Glencoe, Illinois: The Free Press, 1955).

\*\*\*\* See Appendix C.

\*\*\*\*\* Only areas which had at least one block falling into one of the Series 1 through 3, were included; all other areas would have a zero value for characteristic #5.

Table 7a  
Household Characteristics

Characteristic		<u>1</u>	<u>2</u>	<u>3</u> <sup>Area</sup>	<u>4</u>	<u>5</u>	<u>9</u>
1.	Median 1965 Household Income (\$)	2,765	5,636	5,690	3,620	6,200	5,916
2.	% of Population 21-34 years old	15.1	27.3	24.0	13.1	22.4	29.5
3.	% of Population retired	13.4	5.8	5.9	19.4	14.1	3.8
4.	% of Household Income devoted to Rent	26.9	18.1	20.0	19.9	19.7	17.4
5.	% of Household Locations in S-1, S-2, or S-3 blocks	75.1	43.3	55.7	20.5	21.4	26.9
6.	% of Households that are Military Households	3.1	3.7	6.9	8.0	23.3	48.8
7.	% of Households without a Full-Time Employed Member	35.6	20.0	12.5	34.7	24.8	9.8
(a)	<u>Sub-Total: Sum of Percentages #2-#7</u>	169.0	118.5	125.0	115.6	125.7	136.2
8.	% of Households that are Renters	54.2	53.3	58.5	39.0	41.6	40.0
9.	% of Households that are Non-White	68.0	36.6	20.5	12.4	3.3	1.8
10.	% of Households that are Latin	9.3	20.0	22.7	6.7	11.4	12.7
11.	% of Household Heads that are Single (never married)	3.5	16.7	13.6	7.1	5.5	2.5
(b)	<u>Sub-Total: Sum of Percentages #9, #10, and #11</u>	73.8	39.9	28.2	12.0	9.2	12.0

Table 7b  
Household Characteristics

Characteristic		Series			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1.	Median Household Income (\$)	2,039	4,000	4,526	4,485
2.	% of Population 21-34 years old	23.9	13.4	20.4	18.3
3.	% of Population Retired	8.1	12.3	15.8	14.5
4.	% of Household Income devoted to Rent	42.4	18.9	22.7	22.1
5.	% of Household Locations in Series 1, 2, or 3 Blocks *				
6.	% of Households that are Military Households	28.8	4.4	11.3	11.9
7.	% of Households without a Full-Time Employed Member	18.8	30.3	31.0	25.2
(a)	<u>Sub-Total: Sum of Percentages #2-#7</u>	122.0	79.3	101.2	92.0
8.	% of Households that are Renters	70.6	45.5	50.0	39.7
9.	% of Households that are Non-White	30.1	43.4	28.4	19.8
10.	% of Households that are Latin	10.3	11.1	14.8	12.9
11.	% of Household Heads that are Single (never married)	4.5	5.0	9.7	6.9
(b)	<u>Sub-Total: Sum of Percentages #9, #10, and #11</u>	35.9	49.5	33.5	25.8

\*Since this characteristic was used to sort out the various households into each series, an equivalent method for differentiating housing conditions among the 4 series was devised: The % of substandard residential structures within each series was first determined and then adjusted by a density factor corresponding to each series. Results were: S-1:  $74.6\% \times 4.86 = 362.6$ ; S-2:  $51.6\% \times 4.80 = 247.6$ ; S-3:  $38.0\% \times 4.12 = 156.6$ ; and, S-4:  $21.0\% \times 3.60 = 75.6$ .

Since increases in the per cent of households that were renters generally accompanied proportional increases in mobility, this characteristic was factored by multiplication. And, because increases in mobility were accompanied by proportional decreases in the per cent of households that were non-white or Latin - except when these households consisted of single individuals - the per cent of household heads that were single was subtracted from the per cent of households that were either non-white or Latin. The net percentage was then divided into the product of the per cent renter factor and the sum of values for the additive characteristics.

### Results of the Computations

To demonstrate in Key West what is regarded as an axiom elsewhere - namely, a significant correlation between income and mobility - does require some adjustments to income. However, the procedures just described appear both logical and reasonably simple. If this is granted, then the procedures can be applied to each of the six areas and four series in order to construct an index of mobility.

Each area or series receives two ranks - one for per cent of households intending to move, and one for the value of its mobility index. As the number of areas and series which register two identical or similar ranks increase, the correlation grows in strength.

The purpose of Table 8 is not to display a high correlation which, admittedly, has been contrived. Rather, the objective is to illustrate how much strength of the association depends upon characteristic #5: structural conditions within the block of residence. Without it, the value of the correlation coefficient used to measure the strength of the association fades to only 40% of its original value. By way of comparison, if characteristic #8 - per cent of households that are renters - is excluded from the determination of mobility index ranking, the correlation retains much of its initial strength. And, interestingly enough, a stronger correlation persists if, when characteristic #5 is removed, characteristic #8 also is removed. Hence, the per cent of households that are renters is actually misleading when used to "explain" mobility in the absence of a knowledge of structural conditions.

Based on Table 8, the only conclusions possible are: (a) that poor housing does contribute significantly to mobility; (b) that the inevitable loss of retirees through death and of other households in poor housing through announced plans to move will increase vacancy rates in Series 1 blocks from their present level of 6% to around 12 - 13% in the foreseeable future; and, (c) therefore, that a public program to upgrade the housing stock of the community would be consistent with the responses registered to poor housing by the households that occupy it.

### The Quantity of Better Housing Needed

As promised earlier, this section will consider the effect of undoubling on the amount of standard housing needed to house households now located in the blocks of poor housing.

Table 9 records the number of units and types of households living in Series 1 and Series 2 blocks. If the objectives of a housing program included a separate unit for each family now doubled up with another, the total number of units required for Series 1 households would increase to 1,012; for Series 2, the requirement would rise to 450.



Table 8

## Correlation Between Mobility and Income of Key West Households

<u>Basis of Correlation</u>	<u>Correlation Coefficient</u>
All ten household characteristics	.988
Nine household characteristics (per cent of households that were renters excluded)	.806
Eight household characteristics (per cent of households that were renters, and per cent of household locations in S-1, S-2, and S-3 blocks both excluded)	.539
Nine household characteristics (per cent of household locations in S-1, S-2, and S-3 blocks excluded)	.358

The number of units in Series 1 and 2, amounting to 1,462, in need of rehabilitation or replacement, is reduced somewhat when the military households are considered as being offered better housing in the near future by the Federal government. But, even so, a need for 1,228 standard units would still persist.

There is some justification for concentrating exclusively on the need arising out of Series 1 blocks. For one thing, there is a high percentage of renters - 70.6% versus 45.5% in Series 2 - who spend over 42% of their annual income for rent alone. In contrast, Series 2 renters are estimated to spend only 19% of their annual income on rent, and are thus better able to absorb the costs of medical care, education, etc., within their budgets. The non-military housing need in Series 1 would amount to 791 units; if undoubling were not viewed as necessary or advisable, the figure would be reduced to 724.

The figure of 724 units to be rehabilitated or replaced with standard housing is a great deal more manageable than the initial starting figure of 1,462. Whereas the latter would have entailed a programmed effort aimed at more than 13% of all units in the urban area, the former represents only half that many.

As a final refinement of the need for better housing - an estimate of the space needs of civilian households in Series 1 housing has been derived from the percentage distribution according to size and income. Such an estimate is presented in Table 10 and reflects a standard of one or less persons per room.



Table 9  
Housing Needs by Type of Household

	<u>Series 1</u>	<u>Series 2</u>
I. Total Occupied Units	945	405
A. Family Occupied	860	352
- Occupied by one family	793	307
Retiree	130	90
Military	221	13
Civilian	442	204
- Occupied by more than one family	67	45
Civilian plus civilian	4	20
Civilian plus retiree	63	25
B. Non-Family Occupied	85	53
Retiree	48	33
Civilian	37	20
II. Total Number of Groups by Family Status	1,012	450
A. Number of Families	927	397
B. Number of Non-Family Households	85	53
III. Total Number of Groups by Employment Status	1,012	450
Retiree	241	148
Military	221	13
Civilian	550	289

Table 10

Space Need and Income of Series 1 Civilian Households Classified According to Size

Size of Unit (Space Need)*	Persons/HH	<u>Number of Households with Incomes Averaging</u>				<u>Total</u>
		<u>\$2,000</u>	<u>\$5,500</u>	<u>\$8,500</u>	<u>\$12,500</u>	
1 Bedroom or Efficiency	1 - 2	129	73	18	-	220
2 Bedroom	3 - 4	143	139	41	7	330
3 Bedroom	5 - 6	55	66	-	7	128
4 or More Bedrooms	7 or more	<u>28</u>	<u>11</u>	<u>7</u>	<u>-</u>	<u>46</u>
	Total	355	289	66	14	724

\*In addition to the following minimum requirements: living and/or dining area, kitchen, and bath.

# APPENDIX A

## Analysis of Households in Blocks with Blighted Housing

Series 1: Blocks in Zone 01	Series 2: Blocks in Zone 01	Series 3: Blocks in Zone 01	Series 4: Blocks in Zone 01	Series 4: Blocks in Zone 05
11	02	06	17	12
13	10	07	27	23
22	15	08	28	32
25	16	09	40	34
32	19	20	Zone 02	36
33	21	29	01	44
34	26	41	05	45
36	30	Zone 02	08	46
37	31	09	10	47
38	39	13	11	51
42	Zone 02	Zone 03	Zone 03	53
Zone 02	06	04	01	54
02	Zone 03	05	02	55
03	12	11	03	Zone 06
04	13	Zone 04	Zone 04	12
Zone 04	Zone 04	03	02	22
25	18	10	04	23
33	26	13	05	Zone 07
Zone 05	Zone 06	Zone 05	06	60
30	24	11	08	61
39		22	09	62
Zone 06		35	11	71
20		37	12	72
21		38	14	74
Zone 08		40	16	75
12		52	17	Zone 17
Zone 09		56	24	08
02			27	
03			30	
14			31	
15			32	
Zone 17				
13				
16				
27				
35				
36				

## APPENDIX B

### Housing Conditions

#### Density (Unit/Net Acre) Versus Structural Condition of the Block

Blocks with % of all Residential Structures in Substandard  
Condition Equal to:

<u>Density (Units/ Net Acre)</u>	<u>60% or More</u>	<u>50-59%</u>	<u>49-49%</u>	<u>20-39%</u>
7 or less	10.5%	6.2%	8.0%	5.5%
8 - 10	0%	6.2%	12.0%	12.9%
11 - 13	10.5%	18.8%	16.8%	25.9%
14 - 16	26.4%	25.0%	32.0%	33.6%
17 - 19	31.6%	18.8%	20.0%	12.9%
20 - 25	10.5%	12.5%	8.0%	7.4%
26 and over	10.5%	12.5%	4.0%	1.8%
Median	17.3	15.4	14.7	14.2

# APPENDIX C

## Mobility Index\*

	<u>Area 1</u>	<u>Area 2</u>	<u>Area 4</u>	<u>Area 3</u>	<u>S-4</u>	<u>S-2</u>	<u>S-3</u>	<u>S-1</u>	<u>Area 9</u>	<u>Area 5</u>
1. % of Households Intending to Move	2.2	3.6	4.4	4.6	4.7	5.0	8.3	9.7	11.9	13.9
2. All Household Characteristics	3.432	8.884	12.771	14.050	15.588	14.932	24.220	24.306	26.866	35.250
3. Excluding Characteristic #8	6.332	16.739	34.866	23.837	51.240	32.824	50.794	34.450	67.150	84.707
4. Excluding Characteristics #8 and #5	3.518	10.734	28.683	13.320	15.992	6.408	13.671	6.930	53.880	70.293
5. Excluding Characteristic #5	5.912	5.484	11.192	7.794	6.349	2.915	6.836	4.891	21.533	29.229

\*Computation:

$$\frac{(\text{Char. 8}) \times (\text{Char. 1}) \times (\text{Char. 2} + \text{Char. 3} + \text{Char. 4} + \text{Char. 5} + \text{Char. 6} + \text{Char. 7})}{(\text{Char. 9} + \text{Char. 10} - \text{Char. 11})}$$

## Mobility Ranking\*

	<u>Area 1</u>	<u>Area 2</u>	<u>Area 4</u>	<u>Area 3</u>	<u>S-4</u>	<u>S-2</u>	<u>S-3</u>	<u>S-1</u>	<u>Area 9</u>	<u>Area 5</u>
1. % of Households Intending to move 1.00 Coefficient of rank correlation	1	2	3	4	5	6	7	8	9	10
2. All Household Characteristics .988 Coefficient of rank correlation	1	2	3	4	6	5	7	8	9	10
3. Excluding Characteristic #8 .806 Coefficient of rank correlation	1	2	6	3	8	4	7	5	9	10
4. Excluding Characteristics #8 & #5 .539 Coefficient of rank correlation	1	4	8	5	7	2	6	3	9	10
5. Excluding Characteristic #5 .358 Coefficient of rank correlation	4	3	8	7	5	1	6	2	9	10

\*Area of lowest mobility = 1

## COMMUNITY FACILITIES: THEIR RELATIONSHIP TO HOUSING CONDITIONS

The purpose of this section of the Neighborhood Analysis is to describe the adequacy of the major community facilities in relation to the quality of housing in the various areas of Key West. Admittedly, it is difficult to make sharp distinctions between the quality and quantity of facilities on the basis of planning analysis areas. But, it is possible to review the existing conditions to determine if changes in housing condition show any cause or effect relationship to community facilities supplied.

### Public Utilities

The public utilities can generally be stated as being adequate throughout all portions of the urban area, regardless of housing conditions. Concerning the City Electric system, engineering reports indicate that the generating station on Trumbo Road is adequate for all needs in the foreseeable future. The completion of the desalinization plant on Stock Island should relieve the water problem that presently exists.

The one major concern at the present time is the degree of infiltration which occurs into the sanitary sewer line. As has been reported:

"...the existing trunk sewers are of adequate capacity to handle additional flows which may be expected both at present and in the foreseeable future. However, it should be pointed out that these calculations are based on the assumption that there will be a minimum amount of infiltration from any new sewered areas. The fact should not be overlooked that if the present infiltration flows were to increase, the existing trunk sewers would shortly become overloaded thereby limiting what extra capacity the sewer now has."\*

In regard to the foregoing statement, it should be remembered that the primary flow of sewage on the island is from an east to west and north to south direction. This indicates that PAA-1 would probably encounter the most severe problems if the sanitary sewage system was to become over-capacitated. This is due to the fact that the main pumping station (one responsible for pumping effluent out to sea) is located at Amelia and Thomas.

Although Planning Analysis Area 1 contains a substantial amount of high density poor quality housing, it is not possible to relate that to the condition of the public utilities in the area.

\*Smith & Gillespie, Engineers: "Engineering Report on Sanitary Sewage Facilities, Key West, July, 1963."



## Recreation and Educational Facilities

A more visible relationship is apparent between housing condition and available recreational facilities within the urban area than was evident with utilities. With the exception of Higgs Park, recreational facilities west of White Street are almost non-existent. Within this area (which includes Planning Analysis Areas 1 through 5), there are only two small areas amounting to less than two acres of parkland.\* These two parks are the only public facilities available to the approximately 11,000 residents in the area. In addition to the lack of total acreage devoted to parks, the conditions in existence in these two areas are considerably less than adequate. Hence, the condition in this portion of Key West can be described as high density residential development with almost no recreational facilities within walking distance of the majority of homes.

The other area of predominantly deteriorated housing (Flagler Avenue between 12th and 16th Avenues) is more adequately served with recreational facilities. Within this area is Poinciana Elementary School, which is located on an approximately 7 acre tract of land. Also in close proximity to this area is Wickers Field, the high school stadium and little league baseball fields. These areas receive considerable use owing to the fact that families in substandard housing in the area were found to contain an above average number of school age children and large average family size.\*\*

The area between White Street and Kennedy shows only spotted incidence of substandard housing, but still there is only one recreational area of any significance in this portion of the City. Bayview Park, located on the south side of Truman between Georgia and Eisenhower is probably the best equipped and maintained park in the entire urban area. Although this is the only park in Planning Analysis Areas 6 and 7, it is important to note that a significantly lower density is in existence in the residential areas of these zones. This factor helps to alleviate the necessity for more parkland in this portion of the City.

The elementary schools form a semi-circular pattern midway between the center and western extremity of the island. Of the six elementary schools within Key West, four lie within a north-south area bounded by William and Leon Streets. As a consequence, households residing on the extreme eastern or western end of Key West must send their children long distances to attend elementary school. Another major deficiency is that children residing in zones one and two must cross Whitehead, Duval, and Simonton Streets in order to attend school.

With the exception of Poinciana and Sigsbee, all the elementary schools can be classified as having insufficient playground areas. The majority of the area around the schools is generally graveled or concrete making it unusable for many types of recreational uses.

\* This figure discounts Higgs Park and City Beach. Due to their central locations and specialized nature of activity, only a small percentage of the population they serve resides in PAA 1-5.

\*\* For further information on this topic, the reader is referred to "Neighborhood Analysis: Characteristics of Households Residing in Areas of Residential Blight".

Both the junior high and high schools are centrally located in Planning Analysis Areas 7 and 8 respectively. Both are relatively new buildings with the junior high on a 10-acre site and the high school on a 20-acre site.

#### Health and Public Safety Services

All public activities are directed from the City Hall located in PAA-2. The fire department conducts its activities from three locations. The main station is in City Hall, a second station is in PAA-5, and the third station is located in PAA-9.

It appears that all areas of the City receive equal services, with possibly the western portion of the island receiving better fire protection service due to the proximity to the two stations.

#### Summary

The one most noticeable shortcoming in connection with the community facilities and housing conditions is the lack of adequate educational and recreational facilities in Planning Analysis Areas 1 through 5, with the need most critical in areas 1, 2, and 4. The other community facilities show no significant deviations between areas of good and bad housing conditions.

## NON-RESIDENTIAL STRUCTURAL CONDITIONS

Again, the neighborhood analysis approach to city planning is directed toward the identification and ultimate correction of blighting factors which cause the cancerous growths termed slums. In a neighborhood analysis, the condition of neighborhood structures is analyzed to aid in the identification of those areas where blighting conditions are prevalent. As an examination of residential structural conditions has been presented previously, this, then, is an analysis of non-residential structural conditions in the Key West Planning Area. Factors to be observed include not only the location of pockets of non-residential blight but also, the effect that such non-residential blight has on adjacent residential structures.

### Location of Non-Residential Blight

Because pockets of residential blight frequently overlap planning analysis area boundaries, such blighted areas are identified in this section not only by planning analysis area, but by both block number and the streets by which the blocks are formed. As identified on the map depicting non-residential structural conditions, the classification of non-residential structural conditions places each block into one of four series:

- 0 - 19% substandard (Series 4)
- 20 - 39% substandard (Series 3)
- 40 - 49% substandard (Series 2)
- 50% and over substandard (Series 1)

In pinpointing areas of non-residential blight, only series one through three will be employed for this discussion.

### General Analysis

Generally, it can be said that the most blighted non-residential blocks -- those falling into either series one, two, or three -- are located to the west of White Street in Key West, and on that section of Stock Island south of U.S. 1. By planning analysis area, a descending rank order based on the degree of non-residential substandardness is as follows:

<u>Planning Analysis Area</u>	<u>% Substandard (non-residential)</u>
2	44.9%
4	41.8%
3	37.7%
1	30.1%
6	25.9%
5	24.0%
17	23.8%
7	15.0%
9	4.6%
8	3.1%

## 1. Series One

In this series which identifies blocks with over 50 per cent of the non-residential structures in substandard condition, five micro areas (small study areas) within the Key West Planning Area are uniform enough in structural condition to clearly demonstrate such a degree of substandardness. These pockets of non-residential urban decay are bounded and described as follows:

- a. Micro Area 1 - Bounded generally by Caroline Street, Frances Street, Truman Avenue, and Windsor Lane-Passover Lane-Margaret Street, this is the largest area containing a fairly homogeneous display of non-residential blight in the series one classification. Major physical features within the area show a frequent occurrence of narrow alleys, streets with insufficient rights-of-way and/or pavement widths and a street pattern which can be charitably termed not optimum. Existing non-residential structures occupy irregularly platted lots and consist largely of commercial uses in the services and eating and drinking categories. Some industrial uses are present in the form of light industry and wholesaling and warehousing but not of such character as to be inherently detrimental to adjacent structures.
- b. Micro Area 2 - This area contains the second largest grouping of series one non-residential substandardness in the Key West Planning Area. This micro area is bounded roughly by Angela Street, Simonton Street Truman Avenue, and Emma Street, or more specifically, Blocks 1, 2, and 3 of PAA-2 and Blocks 25, 26, 31, 32, 33, 36, and 37 of PAA-1. This is another of Key West's older areas plagued by street rights-of-way which, in many cases, are less than forty feet wide and narrow alleys which contribute to traffic congestion. As in Micro Area One, when a truck or automobile stops on such narrow streets to transfer passengers or goods, the entire street may be blocked. Land uses existing on irregular lotting consist mostly of commercial uses in the services and eating and drinking categories and a small amount of light industry that does not cast an inherently detrimental influence upon adjacent structures.
- c. Micro Area 3 - This area, as are micro areas one and two, is located west of White Street and is bounded generally by Eaton, Elizabeth, Angela, and Whitehead Streets. Specifically, the area consists of Blocks 8 and 9 in PAA-2, Block 13 in PAA-3, and Blocks 14 and 28 in PAA-4. This the third largest grouping of Key West's series one non-residential blight is characterized by inadequate street rights-of-way and pavement widths, narrow alleys, and irregular lotting. Non-residential land uses consist largely of commercial uses in the services, eating and drinking, shoppers' goods, and convenience goods categories. Industrial use is negligible.
- d. Micro Area 4 - This area, bounded by Green, William, Caroline, and Whitehead Streets occupies four blocks, three of which are categorized as having non-residential blight to the extent of over 50 per cent of the structures. Although street widths through and adjacent to the area are generally adequate, Ann Street has a right-of-way width of only 30 feet. Non-residential land uses include commercial use largely in the services and eating and drinking categories, and both light and medium-heavy industry. Examples of industrial use include wholesaling-warehousing and fish processing establishments.



- e. Micro Area 5 - This area of Stock Island is composed of Blocks 21, 31, and 35 of PAA-17. The street pattern and design around and through the area is adequate. The lotting is regular. Non-residential land uses in the commercial category include convenience goods and eating and drinking. Industrial use is represented by wholesaling and warehousing.
- f. Other Areas of Series One Blight - Planning Analysis Area 5 contains isolated blocks of non-residential, series one substandardness. Such non-residential uses consist of the commercial categories of services, eating and drinking, and shoppers' goods, and the industrial category of wholesaling and warehousing. Street widths and design in the affected areas appear adequate.

## 2. Series Two

Series two blight which identifies blocks with 40-49% of the non-residential structures in substandard condition is found in scattered locations primarily to the west of White Street. The most extensive evidence of this blighted category is found in an area composed of Blocks 8 and 9 of PAA-3 and Block 2 of PAA-14. The street pattern and the widths of rights-of-way and pavement are adequate in the area. Non-residential uses are largely industrial being represented by much light industry and wholesaling and warehousing. The City Electric Power Plant (not substandard) is also located in the area and, though categorized as a utility, has an industrial character. Other evidences of series two blight can be found in Blocks 30 and 38 of PAA-4, and Block 50 of PAA-5. These blocks are located in the older section of Key West and are influenced by such factors as poor circulation systems and irregular lotting.

## 3. Series Three

This category of blight, pinpointing blocks with 20-39% of the non-residential structures in substandard condition, is in evidence in scattered locations throughout the area west of White Street, in Planning Analysis Area 8, in Planning Analysis Area 9, and on the section of Stock Island that is south of U.S. 1. Blighting conditions which affect these blocks are similar to those described for adjacent blocks in the series one and two categories.

## Relationship Between Residential and Non-Residential Structural Conditions

As to the question of a residential - non-residential structural relationship in terms of blight, it would seem reasonable to assume that the existence of non-residential structures in a block would have a direct and detrimental effect upon the nearby residential structures. Further, it would seem that residential structural conditions and non-residential structural conditions within the same area are directly related. However, during the structural conditions survey, it was found that the relationships were apparently insignificant. In Key West, many residential blocks where blight is in evidence do not contain non-residential structures. Also, there are many blocks which contain a mix of residential and non-residential structures that do not demonstrate identifiable evidence of

blight. Similarly, regarding the condition of structures, blocks containing blighted non-residential structures did not necessarily demonstrate evidence of residential blight. In essence then, although it would seem reasonable to assume that a direct relationship exists between residential and non-residential structures and conditions, apparently there is, in fact, no significant relationship.

To provide means for proving the hypothesis that no significant relationship exists between residential and non-residential structures and conditions in the Key West Planning Area, a chi-square statistical test was employed. Although a lengthy description of the test procedure could be inserted at this point, in the interest of simplicity only the result of that test will be presented; and, that is, the chi-square test did give statistical proof that no significant relationship exists between residential and non-residential structural conditions.



# INCIDENCE OF SUBSTANDARD STRUCTURES

KEY WEST URBAN AREA

## SUBSTANDARD RESIDENTIAL STRUCTURES

DETERIORATED •  
DILAPIDATED X

## SUBSTANDARD NON-RESIDENTIAL STRUCTURES

DETERIORATED •  
DILAPIDATED X



0' 1000' 2000' 3000'

PLANNING ANALYSIS AREA BOUNDARY



PERCENT OF NON-RESIDENTIAL SUB-STANDARD  
STRUCTURES-BY BLOCK



# SUBSTANDARD NON-RESIDENTIAL BUILDINGS KEY WEST URBAN AREA



PLANNING ANALYSIS AREA BOUNDARY



## ENVIRONMENTAL FACTORS: THEIR RELATIONSHIP TO BLIGHT

The central task of a neighborhood analysis is the measurement of structural and environmental qualities of residential areas, in order to treat or prevent the occurrence of blight and its causes. Urban blight is the physical evidence of structural and environmental deterioration which is caused by many interrelated and complex factors, but basically can be considered the result of one form or other of physical obsolescence and economic dislocation.

Physical obsolescence, as a cause of blight, may be due to simple neglect during the aging of a structure, or it may be due to a condition, such as the inability of the structure to be adapted satisfactorily to current needs. To a large degree, physical obsolescence in Key West is due to such deficiencies, and they affect residential and non-residential areas alike. An equally important factor related to the cause of blight is the living environment. This factor is a measure of many conditions found in the neighborhood which adversely affect the health, safety, and the quality of "livability" in the area. Environmental factors as described in this study are defined in the broadest sense to mean all blighting factors other than physical deterioration of structures. The effects of inadequate community facilities and non-residential uses have already been explored. A discussion of several other significant factors is set out below.

### Environmental Blight

#### 1. Obsolete and Impractical Layout of Lots and Streets

The early development of Key West imposed a system of platted lots and streets, which while entirely suitable for the needs of yesteryear, are literally straightjackets on the city today. The large blocks, many of which were owned by one family, were subdivided into increasingly smaller lots on a traditional basis to provide building sites for the homes of sons and daughters. This quaint custom has produced a haphazard and usually overcrowded subdivision of land, which frequently provides only the poorest access to internally located properties. Streets as small as alleys, some barely wide enough for a small car are simply unable to provide for the service, parking, and primary access needs of present day occupants. Many of these alley/streets dead end in the center of the block requiring difficult maneuvering of vehicles to get out again. Homes were built side by side with remarkably little space between them considering the climate and the need for air circulation.

Streets may be an asset to sound municipal growth and development if they are well designed. In most cities, however, and Key West is no exception, some streets may actually constitute a blighting influence. In the Key West Planning Area, the worst offenders are the gridiron street pattern in residential areas and insufficient street right-of-way and pavement widths. Local or residential streets are designed primarily to provide access to property, light and air, a degree of on-street parking and an easement for utilities; not a route for through traffic. The gridiron street pattern provides no inherent means of channeling traffic, and thus actually



encourages a heavy flow of through traffic in what would otherwise be a quiet residential neighborhood. Insufficient street widths not only promote the inconvenience of street congestion but may also be a safety hazard as well. For instance, a fire truck from fire station number one that was responding to a call in the sector of Key West northeast of City Hall would, if street conditions were optimum, probably turn left on Angela Street from Simonton and then proceed north on Elizabeth Street. However, at the present time, near the intersection of Elizabeth and Angela Streets the pavement widths are so narrow that one parked delivery van could completely block further progress.

## 2. Density As A Blighting Factor

An important environmental factor to be considered when studying the cause of residential blight is the density of dwelling units within a block. A windshield survey of the Key West Planning Area and a comparison between maps depicting dwelling unit density and residential substandardness makes it seem reasonable to assume that dwelling unit density and residential substandardness are directly related. For instance, it is apparent that as dwelling unit density within a block increases, there is a corresponding increase in the incidence of residential blight.

To test the hypothesis that there is a direct relationship between dwelling unit density and the degree of residential substandardness, a four-by-five contingency table was constructed to compare the factors in question for the Key West Planning Area. When the table was complete, a chi-square test of statistical significance was employed to determine the validity of the hypothesis. The method was as follows: In a chi-square test, the hypothesis to be considered is designed as a "null hypothesis" to be either accepted or rejected. In this case, the null hypothesis was that there is no direct relationship between dwelling unit density and residential substandardness. For the hypothesis to be accepted, the test statistics had to be less than the critical value for chi-square. In actuality, using a rejection value of .05, the test statistic exceeded the critical value of chi-square and thus, the null hypothesis was rejected. In essence then, it can be safely stated that in the Key West Planning Area, a high dwelling unit density is one factor contributing to the presence of residential substandardness.

Although evidence of a relationship has been presented, one question remains and that is: Why does increasing dwelling unit density bear an adverse relationship to residential structural condition? The answer must be a qualified one. Of course it is possible to plan for and build multi-story apartment buildings with a large number of dwelling units per acre and have such development be perfectly sound and successful. This discussion however, deals with the relatively unplanned multi-family, older residential construction and single-family residences as are found in Key West. Where blight is most clearly in evidence, the predominant residential structures are old two and three story single-family structures which are either being used as originally intended or are converted to apartment houses. Environmental problems resulting from such high density areas include insufficient provision of light and air, inadequate privacy, poor drainage, inadequate provision of off-street parking, and in general, an over-taxing of already inadequate community facilities. Economic factors also play a part in the density-structural condition relationship. As a low income population occupies the older high density structures, the corresponding low structural maintenance is an attendant blighting influence.

**RESIDENTIAL DENSITY MAP**

KEY WEST URBAN AREA



PLANNING ANALYSIS AREA BOUNDARY

DWELLING UNITS PER ACRE

- 5 OR LESS
- 6-9
- 10-14
- 15-18
- 19 & OVER



While a density of 15 families per acre is not considered abnormal for a central urban area, it is possible to provide decent facilities and living conditions at that density only through town house or apartment construction. In an area with homes in predominantly single-family construction, this density is prohibitively high, and would mean that the average lot size is less than 3,000 square feet. In the older areas of Key West (PAA-1 through 5) of the total of about 137 residential blocks, 85% or 116 blocks have a density of 10 families per acre or more, and 53 blocks have over 15 families per acre. Such densities in single-family areas, even with a mix of multi-family housing, can be found only where tight packing of homes on the land has occurred. This must inevitably lead to environmental deficiencies because there is insufficient space to provide for privacy, outdoor service and living areas or for parking the many cars on which Key Westers are becoming more dependent.

### 3. Inadequate Parking Space

As mentioned previously, the reliance on the automobile for transportation is increasing at an accelerated speed. There has been an 11.8 per cent increase in ownership of automobiles per household during the period 1960 through 1966, and presently there is an average of over 1.04 automobiles per household in Key West. Since these automobiles must have storage places at home as well as at work and other destinations, residential areas characterized by small, narrow lots, fail to provide proper space for this function. This produces a psychologically blighting environment as residents and guests have difficulty finding parking, and the maneuvers required to park and unpark cars come into frequent conflict with moving traffic resulting in further congestion. Use of the street for vehicle storage constricts traffic flow, inhibits local access, and downgrades the quality of the residential environment in general.

The problems of providing parking for cars in non-residential areas are legion. In past years, businesses were frequently constructed over the entire lot area, leaving the parking to be provided at the curb on public right-of-way.

### 4. Lack of Sidewalks and Street Lighting as Blighting Influences

Even in the automobile oriented society of today, pedestrian traffic in cities like Key West is often substantial. Large numbers of children must walk to school, and there are many city residents who utilize local mass transportation facilities which necessitate walking several blocks from their homes to the pick-up point. Sidewalks are needed to separate such pedestrian traffic from the potentially dangerous vehicular traffic. In addition, sidewalks serve to provide, in congested areas, a place for children to play, a pathway for light and air, and a relief from the confinement of high density structures. Conversely, if sidewalks are not provided, the chaotic mix of pedestrian and vehicular traffic will endanger the health, safety, and general welfare of the area's residents, thus creating a situation which is environmentally detrimental.



Street lighting is desirable primarily from the standpoint of safety, both vehicular and pedestrian. Adequate street lighting in periods of darkness serves to reduce automobile accidents by increasing both sight distance and peripheral vision. Regarding crime, although it is evident that the lack of adequate street lighting is a conspicuous earmark of high crime areas, it is doubtful that the deficiency is a controlling factor. Families which are forced to settle and continue to live in such neighborhoods are for the most part already affected by the causal forces that produce social disorders. However, the lack of adequate street lighting does serve to intensify the latent capacities of these families and individuals for anti-social conduct. Thus, the lack of street lighting may also endanger the health, safety, and welfare of neighborhood residents and in such cases, would be a blighting influence.

## AREA TREATMENT PLAN

In view of the findings of the foregoing analysis, the basis for mapping a plan of action employing specific programs for improving housing and the physical environment has been prepared. Each part of the City has been given a recommended treatment classification which broadly represents the most appropriate level of remedial action against the conditions of blight and blighting influences found there. Classifications of treatment are:

1. Conservation
2. Light Rehabilitation
3. Heavy Rehabilitation
4. Redevelopment

Treatment has been specified for residential and non-residential areas alike because of the strong inter-relationships between the different types of development. The Area Treatment Plan Map illustrates the general classification of recommended treatment for all areas. Because the pattern of deterioration is not confined necessarily to any one analysis area, and because the specific combination of recommended treatments for each area can be identified from the Area Treatment Plan Map, the following discussion describes the general locations in need of each type of treatment.

Military housing areas and the Naval Station are outside the City's jurisdiction and therefore excluded from any treatment classification. In any event, military housing is in generally good condition with the exception of the abandoned housing in PAA-9 which, because of its relatively poor condition, has already been slated for redevelopment by the Navy.

Attention is directed to the Summary of Characteristics at the beginning of the Neighborhood Analysis section in which the general recommended treatment for each area is outlined for individual Neighborhood Analysis Areas. Remarks as to considerations which should be given to structures of historic and architectural value are included following the section on Heavy Rehabilitation.

A general discussion of the recommended actions is presented below and includes comments on alternative solutions.

### Conservation

Areas for which a conservation treatment is indicated are still in good condition and relatively free of blight. This classification, identified on the Area Treatment Plan Map, is limited entirely to the newly developed areas south of Flagler Avenue and all but a few areas lying east of Eighth Street. As pointed out earlier, generally all of the public utilities are, at this time, adequately provided to all areas. Some areas in good condition and designated for conservation however have certain deficiencies which should be corrected. Children in the southern portion of Area 7 must walk long distances to their elementary school, and neighborhood recreation and parks are practically non-existent in all areas.

With practically every building in areas marked for conservation or "new" construction, structural deterioration should not become a factor for many years. Sound conservation measures can produce long-term protection against neighborhood blight, such as normal maintenance, code and ordinance enforcement, careful administration of zoning, and the proper provision and maintenance of public facilities.

Blight may first appear in a superficial, but difficult to handle form. An example is a simple lack of elemental maintenance of otherwise sound property such as poorly kept lawns, accumulations of junk and rubbish, or structures with stained or peeling paint. Codes and ordinances are generally ineffectual in correcting such superficial blight, which is generally the result of social attitudes and simple neglect. This mild form of blight, however, tends to proliferate. Unless remedied, it may begin to depress property values resulting in more serious forms of blight. The efforts of organized community and neighborhood organizations can be highly effective in treating this blight by stimulating social awareness and community pride. Spruce up campaigns, especially when assisted through the news media can be highly effective.

### Light Rehabilitation

Between United Street and Flagler Avenue, and extending between the Naval Station and the canal east of Eighth Street, there are a wide range of residential and non-residential properties which because of similarities in the occasional evidence of blight have been designated for light rehabilitation. While most of the structures in this area are in good structural condition, there are a significant number of structures which are in need of minor repairs, and a few which are in poor condition. Basic land development and lot sizes appear to be reasonably adequate although the net residential density is generally on the high side for the areas in single-family development, averaging about 11 dwellings per net residential acre.

The tourist accommodations area, centered at Simonton and South Streets, is part of a transition of land uses taking place in the vicinity. Some conversions also have occurred here, and there is evidence of decline in the several fine old homes, probably due to the effect of this transition. But, generally, these homes are on sufficiently large lots to allow adequate buffers providing insulation from the effects of these changes, and if due regard is given to the shaping and control of future redevelopment, there should be little difficulty in preventing incompatibility between these uses. Protection of the few fine homes in this area should occupy a high place in planning for future redevelopment of the area.

Strict code enforcement and judicious application of zoning requirements are indicated for this treatment area. Enforcement of the building and housing codes as appropriate including condemnation and spot clearance of deteriorated structures is recommended where negligent owners are unwilling to improve their properties to reasonable minimum standards.

The Mobile Home Problem - Although it is not in the City, Neighborhood Analysis Area 17, the southern half of Stock Island has been assigned suggested treatment classifications for the residential areas only. Consisting almost exclusively of mobile homes, practically the entire area has been

designated light rehabilitation because of the many noxious conditions found there. If the same qualitative physical environment were found in a single-family residential area rather than this repository of trailers, it would doubtless be designated for heavy rehabilitation and redevelopment.

It should be understood that in mobile home parks it is generally the physical environment and not structural conditions that produce a blighting problem. Like any basically well designed and constructed vehicle, or home, a modern trailer can be almost maintenance free and easily kept in good condition. When aging of the structure and equipment progresses to an advanced degree the exterior may not show the slightest indication of deterioration. As in any basic type of housing, trailer residents show a wide range of income levels, and as the household survey has shown, there has been a drastic swing toward trailer ownership since 1960. If this trend continues as appears likely, greater emphasis should be placed on improving the environmental quality of trailer parks.

There is very little difference in the qualitative and quantitative space needs of the modern trailer from that of the average small home. A commonly found standard size is currently 12 x 60 feet or 720 square feet, and may include three bedrooms. A reasonable minimum lot size of 45' x 80' would without doubling, produce a density of 12 families per net residential acre. Future developments in trailer parks should be required to provide the same basic improvements as are required of any single-family residential subdivision developer, which includes paved streets and drainage system, sanitary and water systems, lighting and walks, and parks and playgrounds. Although the residential parts of Stock Island are not presently within the City's control, it will be to the City's advantage to influence environmental conditions there, and to prepare for the trend toward trailer ownership by improving and enforcing trailer park development standards in the City.

### Heavy Rehabilitation and Redevelopment

With nearly 40% of the residential and 36% of the non-residential structures west of White Street in substandard condition, the entire 130-block area of the older parts of the City north of United Street has been designated for heavy rehabilitation or redevelopment. Of these, there are about 75 blocks generally considered to be sufficiently adaptable to present day needs and standards to employ a program of heavy rehabilitation. These blocks are generally located north of Eaton Street; south and east of Truman Avenue and Simonton Street and the cemetery; and includes those blocks fronting on the Naval Station along Fleming, Fort, and Louisa Streets.

Typically, residential structural conditions in these blocks have been 20 to 50% of the structures in substandard condition. However, since the general quality of construction of these older homes was sound, the homes appear to be entirely suitable for adaptation to current day needs - and in the district north of Southard, would be practically suitable for prestigious single-family residences in the proposed historic district, discussed later.

Whether a block is designated for "heavy rehabilitation" or "redevelopment", it will be in very poor condition. The essential difference between the two is that "rehabilitation" is applied where, in spite of serious deterioration and blighted conditions, it seems reasonable that the deficiencies



are correctable and that the area can be restored to long-term usefulness by the elimination of blighting conditions; "redevelopment" is applied where the deficiencies are so numerous that the most practicable course is to clear the land and provide for a sound redevelopment. Of course, it is expected that there will be occasional buildings in a rehabilitation area which must be cleared, and frequently many buildings in a clearance area which should be rehabilitated. Each case must be judged on its own merits.

Employing Spot Clearance - One of the most formidable problems facing the renewal of the majority of blocks is the need for greater yard area in order to bring the homes up to date with enlargement and extra rooms, outdoor service and living space, and off-street parking areas. The economic feasibility of upgrading homes on narrow lots with less than 4,000 square feet of ground area is highly questionable; structural deterioration could be rectified, but functional obsolescence would persist.

Almost all single-family residential lots in Key West are 100 feet deep, which would require a minimum lot width of about 45-50 feet to be reasonably feasible of rehabilitation. Many properties in the areas designated for heavy rehabilitation have lot widths of only 25 feet and would require considerable effort and expense to bring them up to standards. One possibility, to be employed in a number of circumstances in which lot sizes are inadequate but a few good buildings remain, involves the acquisition of all or part of a deteriorated property by one or more adjoining owners whose homes are in reasonably good condition. The lot, once cleared of the worst structure, allows the remaining homes to expand and be improved as necessary. Of course, it is recognized that few individuals will be inclined to improve their properties in this manner under prevailing conditions and attitudes in Key West. This solution to a real problem would be realistic only if sufficient inducements were brought to bear, such as strict code enforcement, and perhaps the use of tax abatements which might make such improvement more attractive.

It is also certain that, whatever methods are used, much better results will be experienced when the owner is assured that his investment in redevelopment will be protected by uniform and equitable application of codes and standards.

It must be pointed out, however, that property can never be condemned by any authority simply to create opportunities for benefiting adjacent properties. Even through the Federal Urban Renewal Program, it is not possible to purchase property through condemnation for such purpose. In either case, the acquisition of property for the express purpose of bringing adjoining properties up to standards must be made willingly, by negotiation.

A difficult problem common to a large number of blocks north of Truman Avenue is a condition where the block, about 400 feet square has developed with the lots fronting the streets commonly about 100 feet deep. This leaves a space within the block approximately 200 feet square, or almost one acre which has been further subdivided and developed with homes having no direct access to a street, and frequently relying on only a marginally narrow alley for all access. In most cases, these alleys do not even provide through circulation, and although they are generally

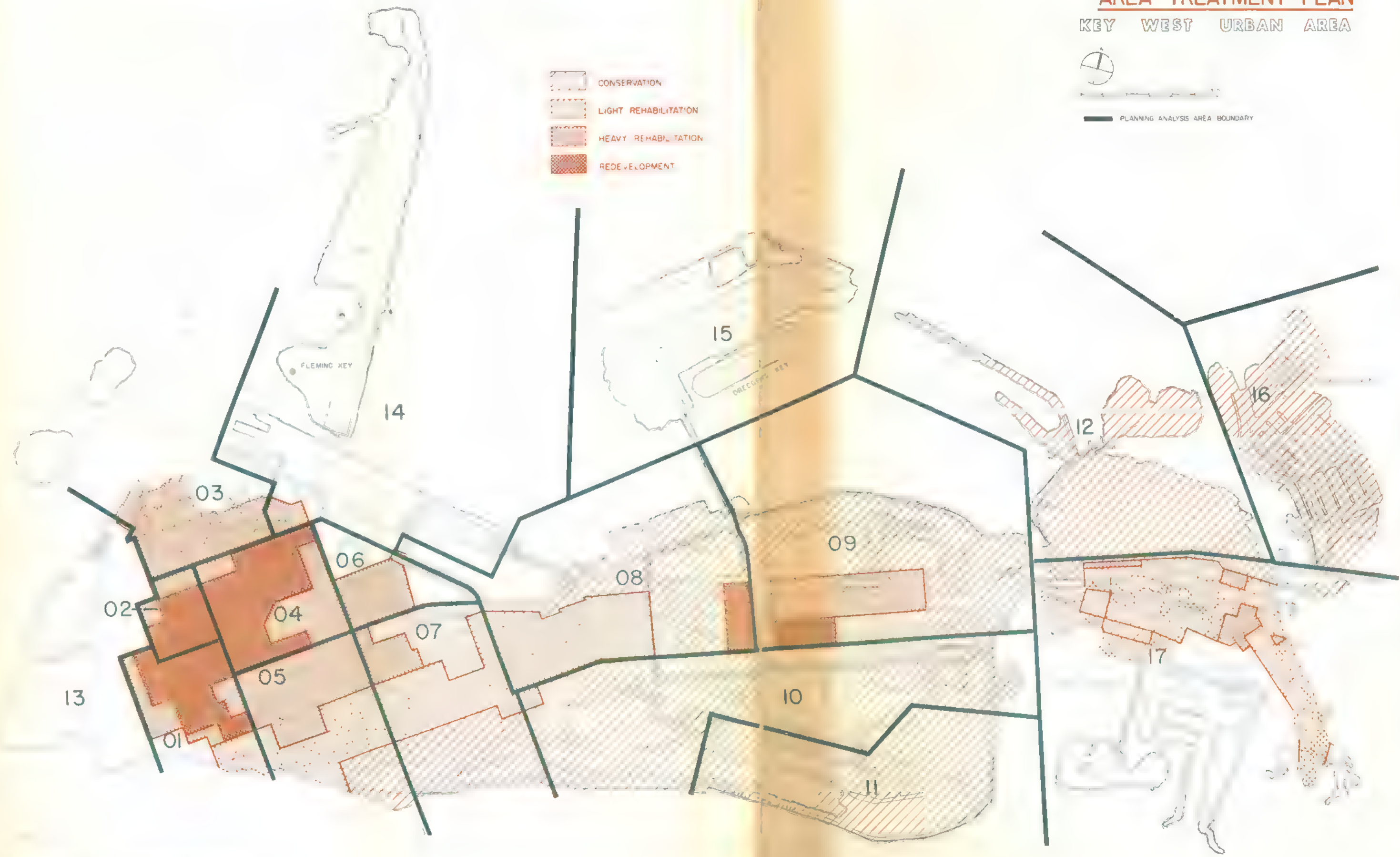
# AREA TREATMENT PLAN

KEY WEST URBAN AREA



PLANNING ANALYSIS AREA BOUNDARY

- CONSERVATION
- LIGHT REHABILITATION
- HEAVY REHABILITATION
- REDEVELOPMENT





wide enough for only a single passenger vehicle to pass, one must perform an intricate turn around maneuver in order to get out again. In any event, these blocks are over developed and inadequately provided with access, the organization of buildings is poorly articulated and, although there are many fine homes found on these blocks, they are placed at a disadvantage by an array of miscellaneous smaller structures. Again, spot clearance should provide the basis for rehabilitating individual structures. By identifying the best and worst structures in the block, a plan for the redevelopment of each block may be devised. Such plans should consider the anticipated market, and because most of the blocks to be treated in this manner are located within the proposed historic district, due regard for larger lot sizes suitable to prestigious residential areas should be given.

#### Redevelopment Involving Extensive Clearance

Although the Area Treatment Plan Map has designated 55 blocks for redevelopment, 80% of these actually require clearance only to the extent that the worst conditions and environmental blighting factors are eliminated and that the block may then be redeveloped with the remaining parts of the block which are suitable for rehabilitation. The remaining 20% of these blocks exhibit such a high incidence of substandard conditions, both residential and non-residential, and such extremely poor environmental conditions including congestion, mixed and incompatible land uses, that almost total clearance will be the only effective actions possible. These blocks are located within an area generally described by a line following Angela Street from Emma Street to the cemetery; extending southerly along Passover Street to an extension of Petronia Street; then along Petronia Street to a block east of Duval Street, then south to Truman Avenue; west on Truman Avenue to one-half block west of Duval Street; then south to Virginia Street, west along Virginia Street to Emma Street, and north on Emma to Angela Street.

A very few buildings in this area are in good condition, including the very attractive residence just across Angela Street from the City Hall, the Hemingway House and the light house. But, for the most part, most buildings in this general area are in extremely poor condition, are substandard in size or supporting facilities, have excessive residential density, consist of obsolete building types unsuitable for rehabilitation, are forced to use inadequate streets congested with traffic and parking spill-over from the many non-residential uses mixed in.

Were this area with its depressed property value to receive extensive clearance, the newly created land would be in an excellent location for a number of attractive redevelopment opportunities. Of course, other blocks in the City may require extensive clearance also as the only effective way to deal with such conditions.

The cost of a clearance program is high; however, Key West is entering a stage of development - and a period of history - in which the exercise of personal choice in the location of one's home and place of employment can range over greater and greater distances. In order to maintain a healthy and prosperous community within the City itself, especially where there is little prospect for dramatic growth and expansion, a major effort must be made to eliminate those parts of the City which have become decayed and outworn, and which detract from the vigor, attractiveness, and the economy of the City.

## Historic Area Treatment

The older areas of town are located almost entirely within Analysis Areas 1 - 5. As expected, the poorest conditions in the City are similarly located and all of the recommended clearance is centered here. While it is desirable to eliminate the worst structures, it is recognized that many of these buildings have certain cultural value because of their architectural interest or historic importance and, if at all possible, should be carefully examined and considered for rehabilitation.

The map entitled "Buildings with Architectural and Historic Value"\* shows that the greatest concentration of these buildings is located north of Southard Street.

This area with these fine buildings, and including areas of special tourist and cultural interest, has been designated the "Old Section" of the City of Key West. The Old Island Restoration Commission was created in March, 1966, by the City Commission and was charged with the preservation of buildings with architectural and historical interest that were located within this section. While it had been in the planning stage by the City for some time, the "Mallory Square" area has been beautifully redeveloped in the last few years, largely through the efforts of another important historical society in Key West, the "Old Island Restoration Foundation".

It is suggested that various groups interested in renewal and preservation for the historic district should consider further efforts in an active rehabilitation program for the entire Old Section. It is also suggested that in order to facilitate the preservation of these buildings and to strengthen Key West's historic interest, an Old Section Redevelopment Plan should be prepared to guide redevelopment and restoration action.

As part of this plan, some consideration should be given to moving the best buildings which are located in areas designated for clearance into the Old Section and placing them strategically alongside other fine buildings. This procedure would admittedly reduce somewhat the scale of Key West's visible history, but in many cases would appear to be an exceptional alternative to either the loss of the structures or permitting them either to remain submerged or else an incongruous symbol in an otherwise completely redeveloped area. Then, too, introducing additional good buildings into the Old Section would strengthen the visual interest in the area, and would help fill the voids left by the elimination of badly deteriorated structures.

Aid in further identification of the best architectural examples may be obtained through the expert assistance of the Historic American Building Survey team which has made photographic surveys in Key West and is currently planning to bring a research team of scholars in order to prepare measured drawings of selected buildings. This survey which is sponsored by the U.S. Department of Interior through the National Park Service might be used to supplement an application necessary to obtain grants for historic preservation. Attention is directed to the description of programs in the next section.

\*This map was prepared from survey data compiled by Mrs. Betty Bruce, a member of the Old Island Restoration Committee.

BUILDINGS WITH ARCHITECTURAL AND HISTORICAL VALUE

KEY WEST URBAN AREA



PLAN OF KEY WEST URBAN AREA





It would be desirable to insure the viability and stability of the Old Section by restoring its attractiveness as a prestige residential area. This generally will require that some spot clearance be undertaken in order to provide adequate space for improvements, such as modern service areas, outdoor recreation, and off-street parking spaces. The large size of the blocks in this area makes them quite suitable for this type of redevelopment.

Special efforts for protecting and buffering properties adjacent to the boundary of the Old Section will be necessary to preclude adjacent uses detracting from the appeal of this area.

It is pointed out that the limited size of the Old Section will not only make it a convenient and easily administered project, but will insure that the limited market for prestige homes is not oversupplied, which could weaken the demand and the chances for long-term success.

A word of caution regarding provision of "open space" in the Old Section. While it is certainly necessary to provide parks and playgrounds for these residents, it would be unwise to locate them within the heart of the district, because much of the charm of the "Old City" may be attributed to the character derived by the narrow, tree-shaded streets beautifully framed by the fine homes. To introduce a large park, within this confined area, might be as much a jarring intrusion as a pleasant relief. Perhaps such improvements would be best located along the boundaries of the district to serve also as an effective buffer against less desirable surrounding land uses.



## DESCRIPTION OF PROGRAMS TO ASSIST IN THE EXECUTION OF AREA TREATMENT PLANS FOR KEY WEST

There are many programs providing non-local funds improving the physical environment of Key West in accordance with locally defined objectives. From the City's point of view, it appears desirable to distinguish between programs geared to accomplish very limited objectives and programs aimed at extensive physical change. The following classification has been devised as a means of grouping programs that are roughly comparable in the level of local commitment they require:

1. Programs supplying funds for survey and planning activity only.
2. Programs involving the above plus the construction of physical improvements on property already in public ownership.
3. Programs to assist in the public acquisition and improvement of land.
4. Programs to help finance land acquisition, installation of improvements, and construction or renovation of structures as well.

### Type (1) Programs: Survey and Planning

The "701" Program - Key West is already participating in the "701" program of local planning assistance grants. Just as two-thirds of the cost of this and related planning reports are being financed with non-local funds, the same section of the Housing Act would furnish two-thirds of the money needed to determine the cost of rehabilitation or restoring structures associated with the historic or architectural significance of Key West. Thus, restoration of structures for which the Historic American Building Survey is scheduled to produce measured drawings could be studied by means of such a grant.

The subject of mass transit needs in Key West also deserves mention as an appropriate target for "701" assistance. While Key West is not large by metropolitan standards, the density and compactness of its development are not well suited to unlimited reliance upon private vehicles as the mode of travel.

Public Works Planning Advances - This program provides interest-free advances for the planning of such public works as water and sewer systems, public buildings, and health facilities serving the entire community. The advances are repayable at such time as construction begins; consequently, they are made available to communities that can demonstrate ability to undertake construction within a five-year time span.

Community Renewal Program - A planning grant can be received from the Federal government to cover two-thirds of the cost of preparing plans that identify the type and timing of sustained renewal activity to remove and prevent blight within each part of the community.



General Neighborhood Renewal Plan - A plan for dividing urban renewal activity centered on one project area into a series of (two or more) stages scheduled for completion within ten years. The plan can be financed by a Federal advance that becomes an eligible project cost for purposes of calculating the local share of net expenses for executing the project.

An Initial Phase for Urban Renewal Survey and Planning - In order to better evaluate the advantages and liabilities of urban renewal actions, it would be possible to proceed with planning for an actual renewal project. The cost of preparing plans for redeveloping an area eligible for renewal treatment is financed in a manner similar to the General Neighborhood Renewal Plan. In both instances, should the project be abandoned prior to execution, repayment of the advance is necessary before any other project would be approved for funding.

#### Type (2) Programs: Construction of Public Improvements

Code Enforcement - Key West could, in an area designated for restoring structures to standard condition through code enforcement, receive a grant amounting to three-fourths of the cost -- not only of the enforcement program -- but of improving street conditions, installing sidewalks, street lighting, and landscaping as well.

Demolition Program - In situations where code enforcement has been conscientiously applied, and when efforts to eliminate the public nuisance and hazards imposed by physically unsound structures have yielded little or no success, a grant covering two-thirds of the demolition costs for such structures can be obtained.

The Urban Beautification Program - Grants are made to cover up to 50% of the difference between the community's recent level of beautification expenditures and those proposed for the future. Eligible development costs are similar to those found under the code enforcement program, but are associated with any public property rather than a designated code enforcement area.

#### Type (3) Programs: Public Purchases and Improvement of Land

The Open Space Program - Grants are authorized to cover up to 30% of the cost of acquiring undeveloped land, or 50% of the cost of either acquiring and developing open space or else acquiring and clearing developed land for open space purposes. Eligible development costs under this program include such improvements as landscaping, basic water and sewer facilities, walks, roadways, fencing, ornamental features, and certain (open-air) recreational facilities.

The Urban Renewal Program - Grants to cover -- in the case of Key West -- three-fourths of the net cost, i.e., difference between (a) costs of planning and execution of a project and (b) proceeds gained through re-sale of the land, offer an opportunity for Key West to deal effectively with areas in which the



environmental and structural deficiencies can not be corrected by any of the programs described above. Operation of the renewal program provides for advances of funds to localities during project execution, and permits the local share of the net cost to take the form of non-cash contributions. In addition, any local cash contribution may be budgeted over a four-year period. Unlike the open space program, renewal activities involve public acquisition of land on an interim basis only.

#### Type (4) Programs: Public Land Acquisition, Installation of Improvements, and Construction or Renovation of Structures

Urban Neighborhood Facilities - Grants covering two-thirds of the development costs for health, recreation, and related social services can be obtained if the locations proposed for such facilities will provide convenient service to a significant portion of the community's low or moderate income residents.

Historic Preservation - Grants covering 50% of the costs involved in preserving historic structures for public use and benefit are made available under Title VII, Section 709, providing a state plan for historic preservation exists and includes the structure in question.

Under Title VI, Section 603, grants up to \$90,000 are available to renovate or restore historic structures owned and maintained by the National Trust for Historic Preservation. These grants can be made to the Trust with respect to structures located in states without a plan for statewide historic preservation.

Finally, under Section 110 of Title I, eligible renewal project costs for which Federal loans and grants will be made in order to facilitate execution now include: (1) costs of acquiring, rehabilitating or restoring structures of historic or architectural value within a project area, and (2) costs of relocating such structures located outside the project area on sites within the project boundary.

Public Housing Programs - Three distinctly different applications of grants covering 90% of the development costs have injected far more flexibility into the public housing program.

1. New unit construction allowing \$2,000-\$2,400 expenditures per room in housing for low income households. Room costs for the elderly or the handicapped may exceed the above range by \$1,000.
2. Leased units from the private housing inventory may constitute one-sixth of the total of public housing units. Such units may be particularly appropriate for large families with requirements for four or more bedrooms.\*

\*The survey sample indicated 35-40 households of this size have incomes within the range permitted by the public housing program. Furthermore, rental on this type of unit will be financed in localities without a Workable Program.



3. Units purchased by the Housing Authority may amount to one-fourth of all public housing units; moreover, those which are in detached or semi-detached structures may be sold to the tenant if his earning ability and motivation warrant such a transaction.

These added dimensions to the public housing program are, for two reasons especially significant for Key West:

1. The need for public housing has grown during the interim since the City last made application for additional units. This application, submitted in 1961, was approved by PHA and funds for 300 new units were reserved, pending the selection of a site. Failure by the City to resolve the issue of site selection resulted in revocation of the original approval.

The household survey data indicates that approximately 500 civilian households, living in substandard housing within Series 1 blocks, meet the income requirements for public housing. Of these, it is estimated that 170-180 are retiree households.

2. In addition to the compelling need for supplying low income households with standard housing, the prospect of redeveloping some part of an urban renewal project area in public housing offers an unusual financial incentive to the City. One-third of the difference between (a) the cost of acquisition and improvements to a public housing site within a renewal project area, and (b) the sales price to the Housing Authority can be applied by the City towards its share of overall net renewal project costs. As described in Section 107 (a) of Title I, this credit serves to compensate the City for the local expenditures or taxes that are foregone in developing public housing.

Public Facilities, College Housing, and Hospital Loans - Long-term loans covering 100% of development costs are made available to communities or public agencies experiencing an inability to market bonds on reasonable terms.

Senior Citizens Housing Loans - Long-term loans covering 100% of construction costs for housing elderly persons who are ineligible for public housing and unable to secure adequate private housing. Eligible recipients of such loans would include non-profit corporations, consumer cooperatives, and non-federal agencies.

#### Remarks

It should be noted that the needs for housing and community improvements certainly justify placing primary emphasis on a practical merger of public housing and urban renewal programs. The creation of a public housing site within a renewal site may offer a means of avoiding whatever obstacles prevented the City from designating such a site at an earlier date.

Renewal activity could also promote historic preservation objectives, particularly when the lack of a state plan deprives localities in the state of the use of grants under Section 709 of the Housing Act.

However, funds for these activities as well as those for community improvements under the code enforcement program require a certified Workable Program for Community Improvement on behalf of Key West. Although the lack of certification places any community with needs comparable to those evident in Key West at a severe disadvantage, certification is not a requisite for the other programs mentioned in this section, of which the leasing of private units for public housing is one. Thus, urban neighborhood facilities, open space acquisition, urban beautification, the loan programs described, and most of the type (1) programs are ones for which Key West even now is eligible.